

WISABI BANK ATM TRANSACTION ANALYSIS

Overview

Demography

Time

Profession

Utilization
& Summary

Insights

Recommendations



ATM COUNTS BY STATE

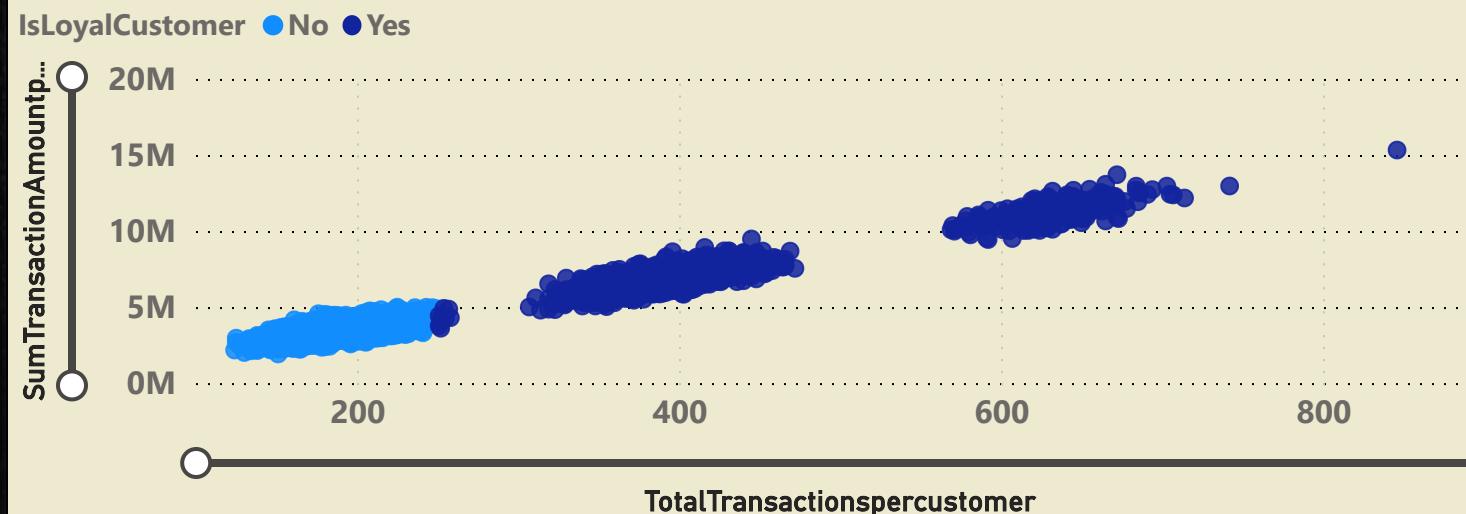


TRANSACTION OVERVIEW

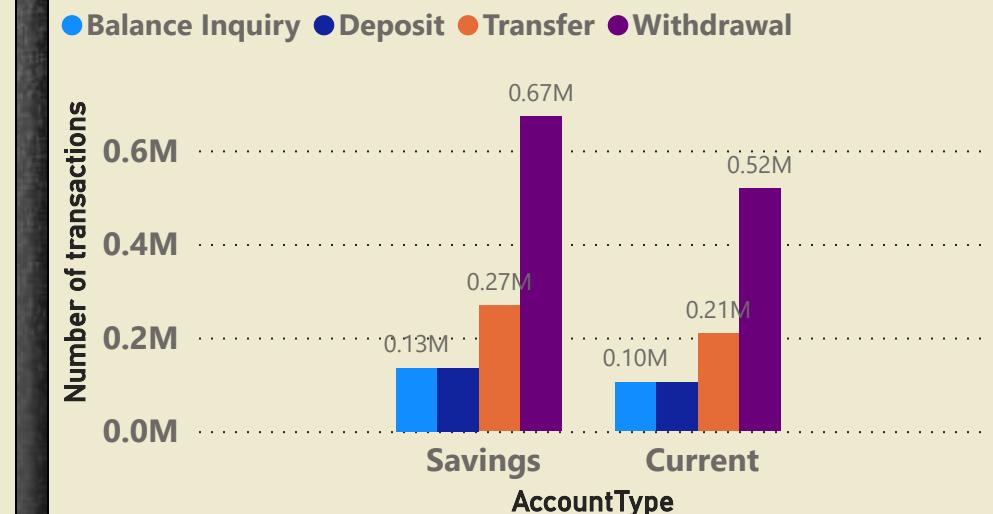
Number of Transactions Split across by Percentage



Number of Transactions Vs Total Amount of Transaction _Per customer



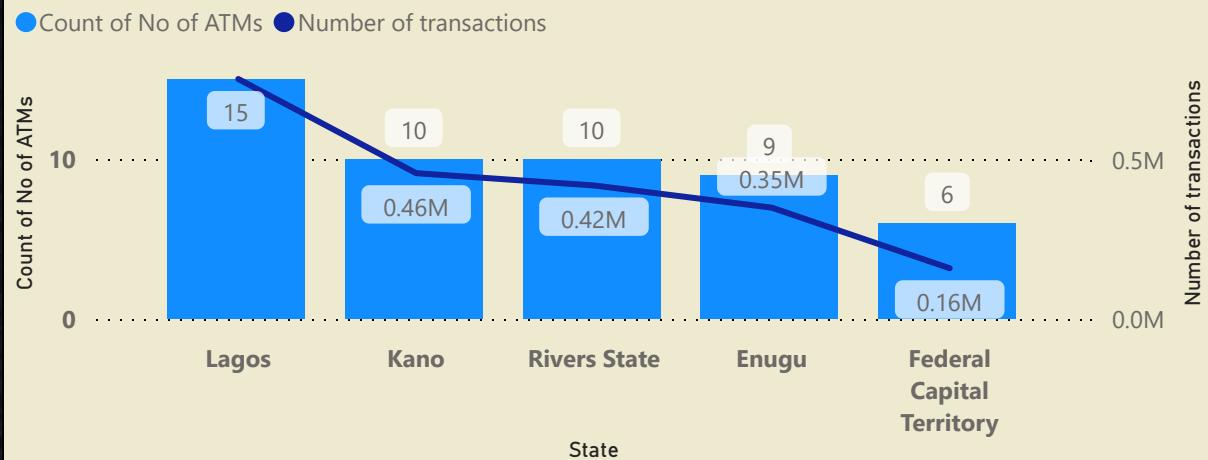
Number of transactions Vs Transaction&Account Type



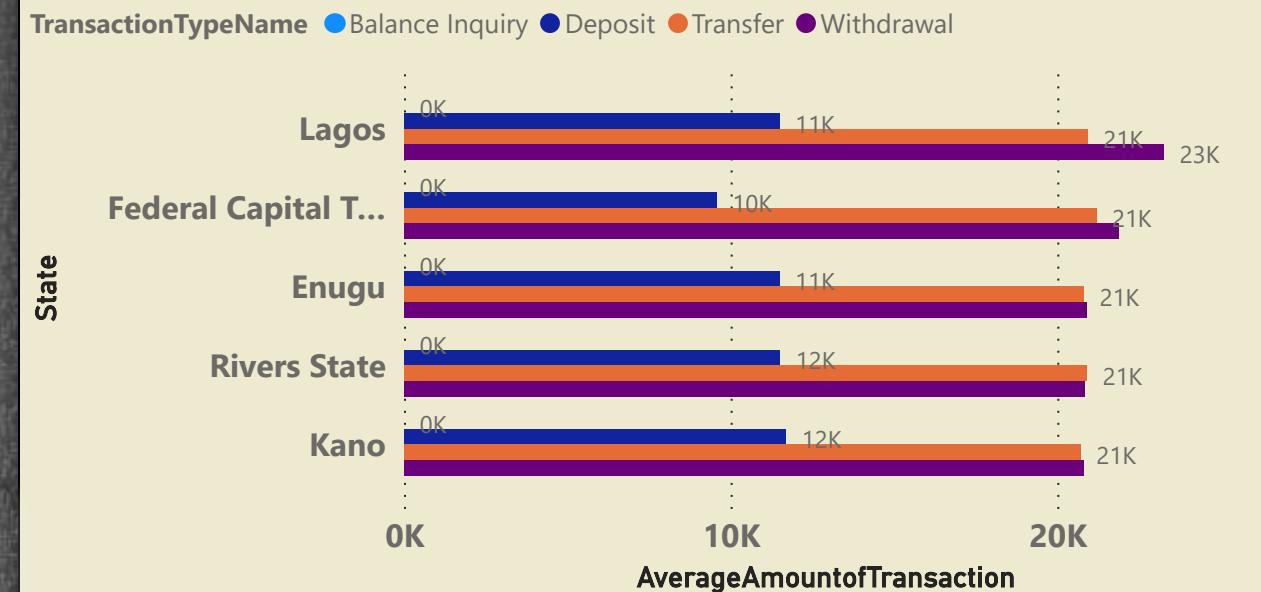


ANALYSIS OVER DEMOGRAPHY

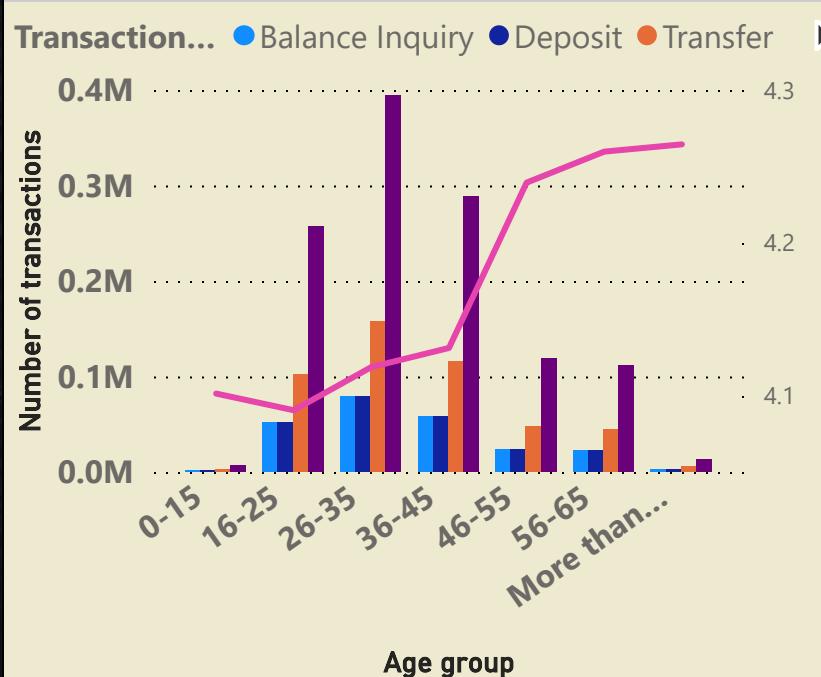
Number of ATM Vs Transactions



Avg Transaction amount Vs Transaction type



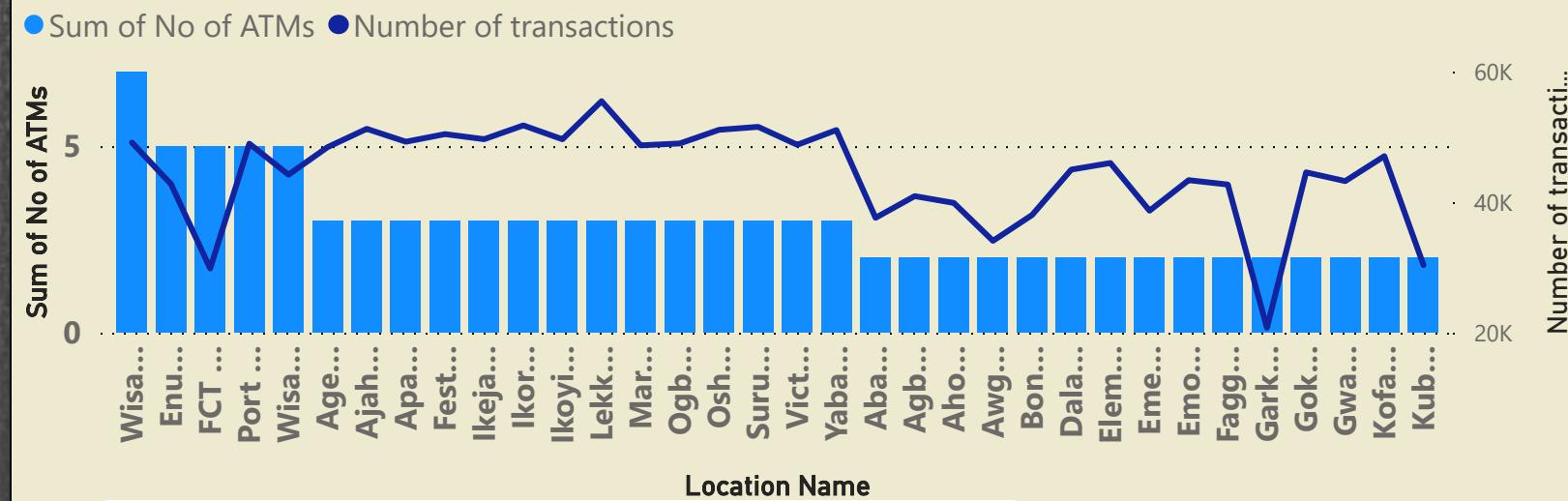
Average timetaken for Transaction



Avg No. of Transactions

243

Number of ATM Vs Transactions by City





ANALYSIS OVER TIME

Number of transactions by Hour and Type

TransactionType Name: Balance Inquiry (Blue), Deposit (Dark Blue), Transfer (Orange), Withdrawal (Purple)

Number of transactions

0.1M

0.0M

0 5 10 15 20

Hour

Number of transactions by Month and City

City: Abuja (Blue), Ahoada (Dark Blue), Awgu (Orange), Bonny (Purple), Eleme (Pink), Emohua (Dark Purple), Enugu (Green), Gokana (Dark Green), Kano (Teal)

Number of transactions

50K

0K

2 4 6 8 10 12

Month

Avg. Timetaken by Hour and own customer

0 1

AverageDuration

2

4

5

4

3

2

1

0

1

2

3

4

5

4

3

2

1

0

12:00 AM 3:00 AM 6:00 AM 9:00 AM 12:00 PM 3:00 PM 6:00 PM 9:00 PM

Hour_Start_Time

17.98K

Avg. amount of transaction

2M

Number of transactions

Sum of transaction amount and Number of transactions by Month

TotalSumofTransactionamount (Blue), Number of transactions (Dark Blue)

TotalSumofTransact...

3.5bn

3.0bn

2.5bn

2.0bn

1.5bn

1.0bn

0.5bn

0.0bn

200K

180K

160K

140K

120K

100K

80K

60K

40K

20K

0K

January February March April May June July August September October November December

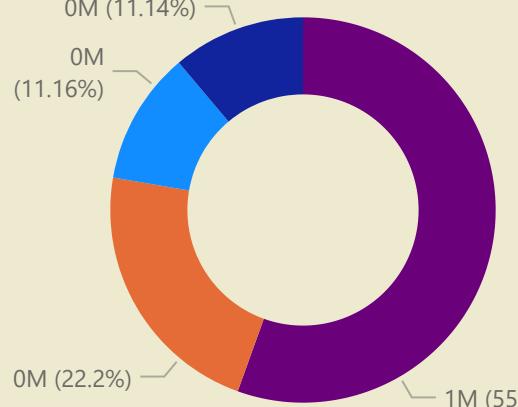
Month Name



ANALYSIS OVER CUSTOMER PROFESSION

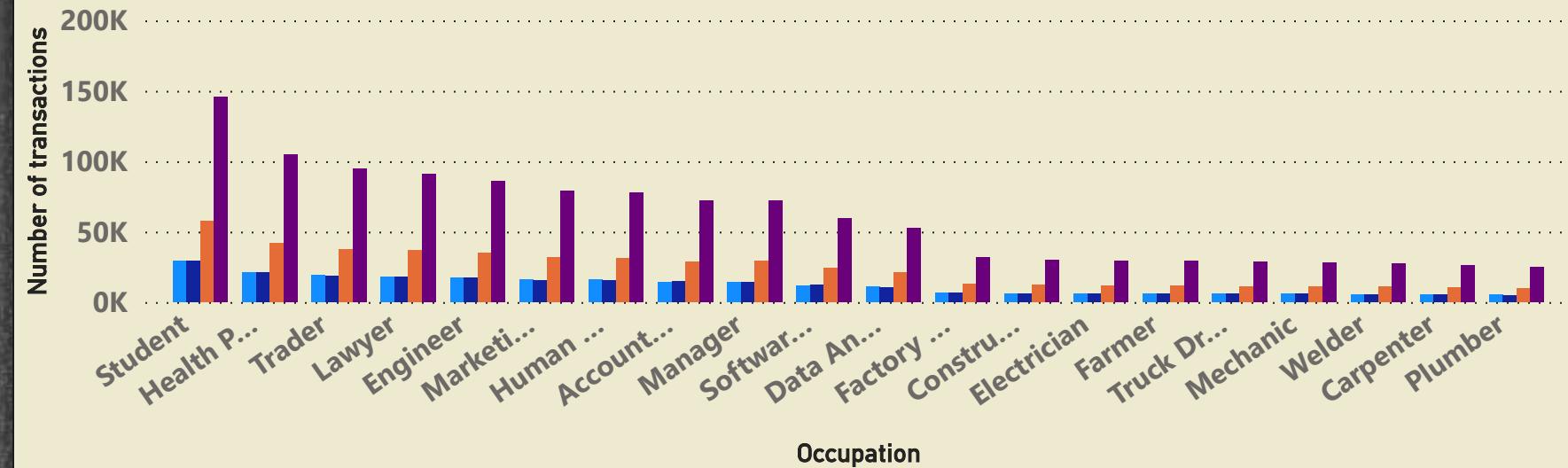
No of transactions (%) TransactionType

- Withdrawal (55.5%)
- Transfer (22.2%)
- Balance Inquiry (11.16%)
- Deposit (11.14%)



Number of transactions by Occupation and Transaction Type

TransactionTypeName: Balance Inquiry (Blue), Deposit (Dark Blue), Transfer (Orange), Withdrawal (Purple)



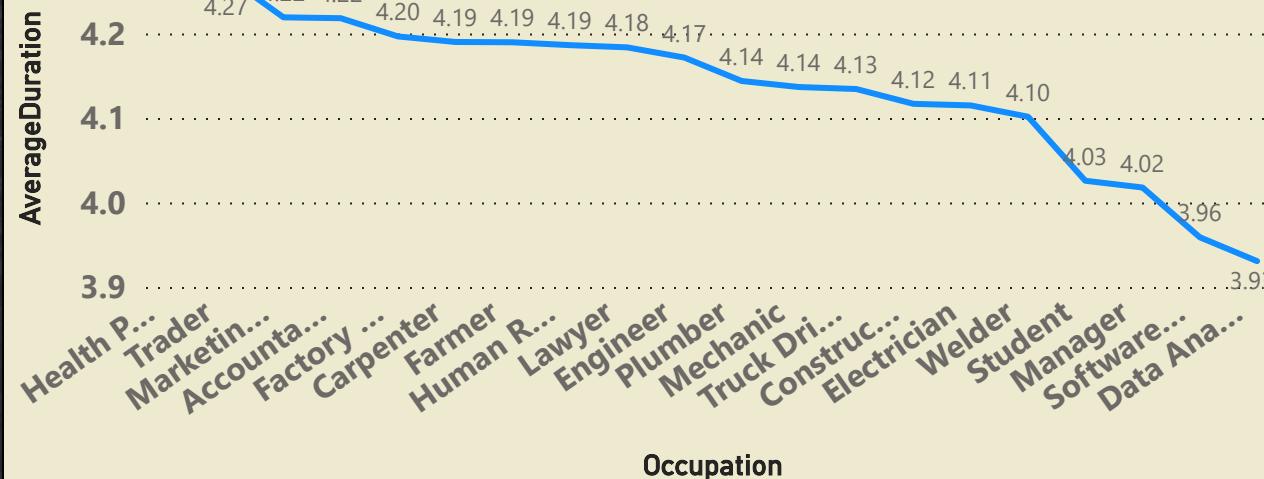
Avg no. of Transactions by Occupation

Occupation



Average Duration by Occupation

AverageDuration



4.14

AverageDuration

2M

Number of transactions

17.98K

AvaAmountofTransacti...

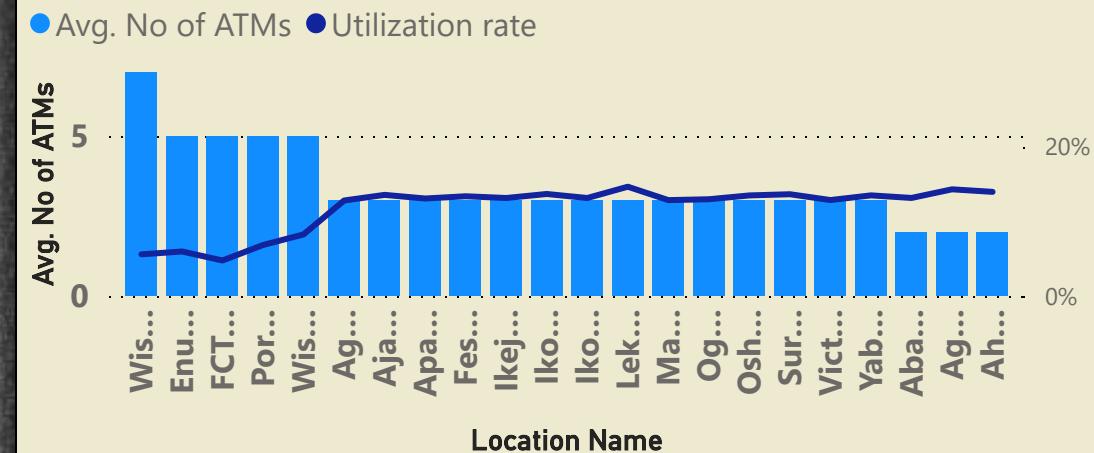


ANALYSIS BY UTILIZATION AND TRANSACTIONAL SUMMARY

Utilization rate by Country and State

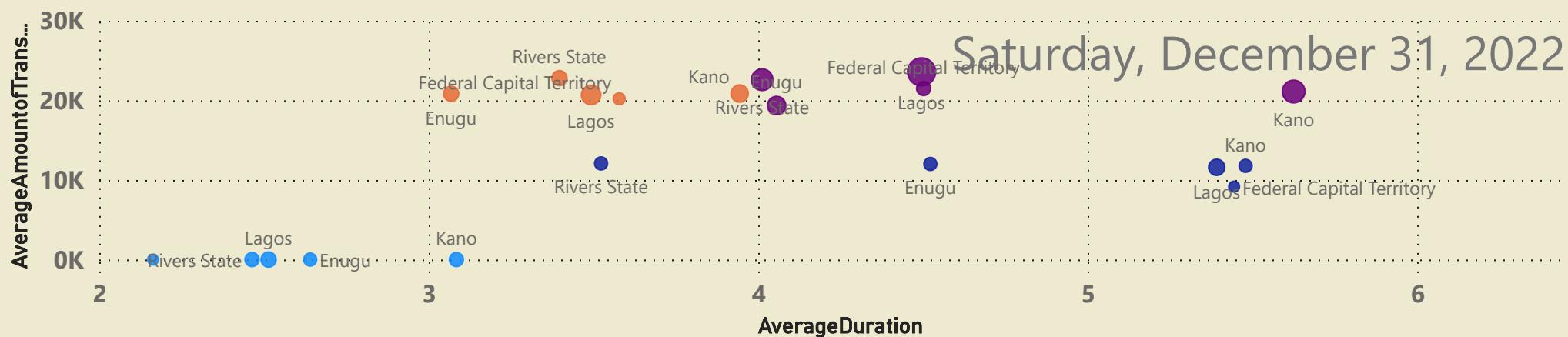


Avg. No of ATMs and Utilization rate by Location Name



Average Duration, Average Amount of Transaction and Number of Customers by State, Transaction Type and Date

● Balance Inquiry ● Deposit ● Transfer ● Withdrawal



50

Count of No of ATMs

12.9%

Utilization rate

8819

Number of Customers

2M

Number of transactions

39bn

Sum of Transaction amount



1.Transaction Analysis:

- The average transaction amount in Lagos city is higher compared to other cities.
- There is no significant difference in transactions based on gender and account type.

2.ATM Usage:

- Lagos has the highest number of ATMs (15), indicating high traffic and usage.
- Enugu has low transfer times (3 minutes) compared to other states.
- Balance enquiry time taken is consistent across all states.

3.Transaction Types and Peak Hours:

- Withdrawal is the most popular transaction type among customers.
- The peak hours for any transaction type occur between 4 pm and 5 pm for all age groups.
- There are very few transactions before 6 am.

4.Monthly and Weekly Trends:

- March has the highest number of transactions, while February has the least.
- Wednesday and Friday have the highest transaction volumes, while Sunday has the lowest.

5.Transaction Patterns by Age Group and Occupation:

- Students use ATMs frequently, and the age group 26-35 has the highest transaction volume.
- Healthcare professionals represent the majority of users in this age group.

6.Peak Hour Transactions:

- On average, 234k transactions occur during the peak hour (4 pm to 5 pm), with withdrawals being the most common.



7. Weekend vs. Weekday Transactions:

- There is minimal difference in hourly transaction patterns between weekends and weekdays.

8. Customer Loyalty and High-Value Transactions:

- Majority of the customers are considered loyal, with a transaction threshold of $>= 250$ transactions.
- Some customers have exceptionally high transaction portfolios, with one customer making 846 transactions totaling 15 million.

9. Transaction Patterns by Age Group:

- Deposits are less frequent across all age groups, while withdrawals are more common.
- People above 65 make minimal transactions, while the 25-35 age group has the highest transaction volume.

10. ATM Utilization and Locations:

- Lagos and Kano consistently have high ATM usage, while Enugu has low ATM usage.
- FCT Abuja and Wisabi bank HQ have excessive ATMs relative to usage, while Sabon Gari has the highest utilization rate.

11. Multiple ATM Usage:

- In the dataset, no customer used more than a single ATM, indicating a low probability of using multiple ATMs.

12. Transaction Duration Analysis:

- Kano has a higher average duration for withdrawals (5.5 minutes), while Enugu has low transfer times (3 minutes).
- Deposit duration is slightly higher for age groups above 45 and below 15 compared to other categories.

13. Transaction Types and Account Types:

- Savings accounts generally have more transactions than current accounts.
- Individuals below the age of 25 have fewer current accounts, resulting in a higher proportion of transactions made through savings accounts.



14. Regional Differences in Transactions:

- Lagos has the highest average withdrawal amount, the Federal Capital Territory has the highest average transfers, and Kano has the highest average deposits.
- Enugu, River State, and Kano have similar average amounts for withdrawals, transfers, and deposits.

15. Daily Transaction Analysis:

- Lagos has the highest number of transactions per day, with peak hours between 3 pm and 6 pm for all states.

16. Monthly Transaction Patterns:

- March has the highest transaction volume, followed by May, July, October, and December.
- February has the lowest number of transactions.

17. Transaction Distribution by Transaction Type:

- Cash withdrawal is the most common transaction type among both Wisabi and non-Wisabi customers.
- The percentage of transaction types does not vary significantly based on location.
- Withdrawal is the most frequent transaction type at any given time of the day.

18. Transaction Frequency by Age and Occupation:

- Average transaction frequency does not vary significantly by occupation.
- People above 65 years have a higher transaction frequency compared to the age groups 45-65.

19. Transaction Outliers and Histogram Analysis:

- Transaction frequency and transaction amount do not have any outliers.
- The most popular transaction amount is less than 20k, and the most popular number of transactions ranges from 140 to 270.



20. ATM Utilization Rate:

- Kano has the highest utilization rate, while the Federal Capital Territory has the lowest.
- FCT Abuja and Wisabi bank HQ have excessive ATMs relative to usage, while Sabon Gari has the highest utilization rate.

21. Early Morning Transactions:

- Transaction duration is longer during the early hours, which may be due to limited staffing or other factors.

22. ATM Utilization Rates:

- Kano has the highest utilization rate (18.6%).
- Rivers and Lagos have utilization rates greater than 12%, while Enugu has an 11.6% utilization rate.
- The FCT has the lowest utilization rate (8.5%).

23. Transaction Frequency by Age Group:

- Customers between 15-25 years have the highest transaction frequency (260).
- Customers above 65 years have a higher transaction frequency (216) compared to the age groups 56-65 and 46-55.

24. Transaction Duration by State:

- On average, withdrawals in Kano have the longest transaction duration (>5 mins) compared to other states.
- Kano, Lagos, and the FCT have longer transaction durations for deposits (>5 mins), while Rivers has the lowest transaction duration for deposits (<4 mins).

25. Daily Transaction Patterns:

- ATM transactions in Lagos gradually increase from 6 am and peak between 3 pm and 7 pm.
- Similar patterns are observed in other states, but transactions peak earlier in Kano (around 11 am) and decline sharply after 5 pm.
- Lagos has significant transaction activity after 7 pm compared to other states.



[26.Transaction Amounts by State:](#)

- Withdrawals have the highest transaction amounts on average, followed by transfers, with deposits having the lowest amounts.
- The FCT has comparatively lower deposit amounts on average across all locations.

[27.Transaction Types by Age Group:](#)

- Withdrawals are the most common transaction type (>50%) across all age groups, followed by transfers (>20%).
- Deposits and transfers account for a significant amount of transactions (>10% each) across all age groups.

[28.Monthly Transaction Volumes:](#)

- March has the highest number of transactions and transaction amounts.
- Other months with high transaction activity include January, May, July, October, and December.
- February has the lowest number of transactions and transaction amounts

Click for

RECOMMENDATIONS

To Improve Services & Operations



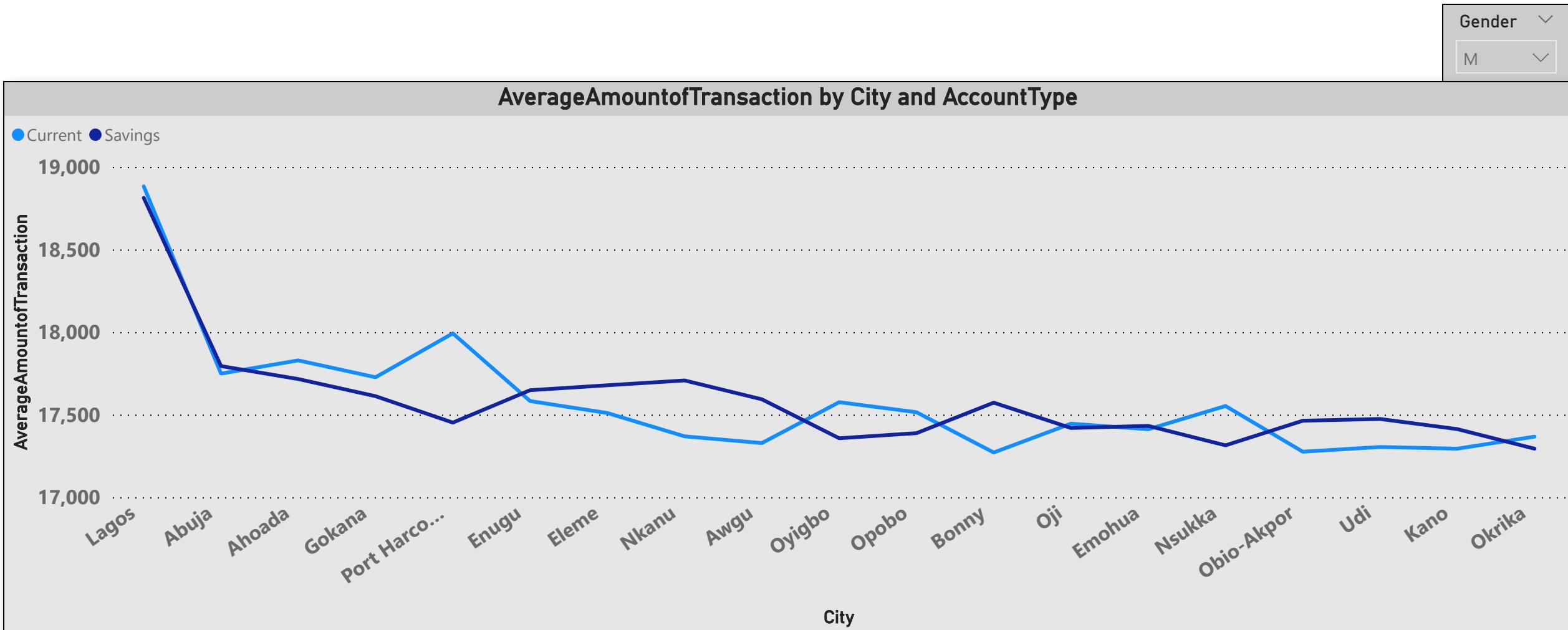
RECOMMENDATIONS

1. **Increase ATM Availability:** Identify areas with low ATM utilization rates and consider relocating or removing underutilized ATMs. Allocate resources to high-traffic locations such as Lagos and Kano to ensure an adequate number of ATMs to meet customer demand.
2. **Optimize Peak Hour Operations:** Since the peak hours for transactions occur between 4 pm and 5 pm, allocate sufficient staff and resources during this time to ensure smooth operations and minimize customer wait times.
3. **Enhance ATM Maintenance:** Focus on addressing issues that cause longer transaction durations, especially for withdrawals and deposits. Regularly monitor ATM performance and conduct maintenances during low use hours to minimize disruptions.
4. **Improve User Experience:** Enhance the ATM user interface to make transactions more intuitive and user-friendly. Ensure clear instructions are displayed, and provide multilingual options to accommodate diverse customer needs. Regularly update software and firmware to maintain security and functionality.
5. **Diversify Services:** Offer new transaction types like bill payments, mobile top-ups, non-bank account transfers, digital wallet integration, ability to withdraw different denominations and check deposits to enhance customer convenience.
6. **Enhance Security Measures:** Implement robust security protocols to protect customer information and prevent ATM fraud. Regularly update security systems, educate customers about safe ATM usage practices and monitor for suspicious activities.
7. **Collaboration with Partners:** Collaborate with banks, retail outlets, and other businesses to expand ATM network coverage and increase convenience for customers. Explore partnerships that enable surcharge-free ATM usage for customers of partner banks or businesses.
8. **User Survey:** Conduct surveys or use customer analytics to understand the preferences and habits of customers who use the ATM and tailor the ATM's services and features to better meet their needs.

NOTE: The upcoming pages are worked out visualizations individually which are displayed at dashboards,

**TO FIND INSIGHTS FOR BUSINESS QUESTIONS IN ORDER TO
IDENTIFY SOLUTIONS/SUGGESTIONS FOR MAIN PROBLEM
STATEMENT**

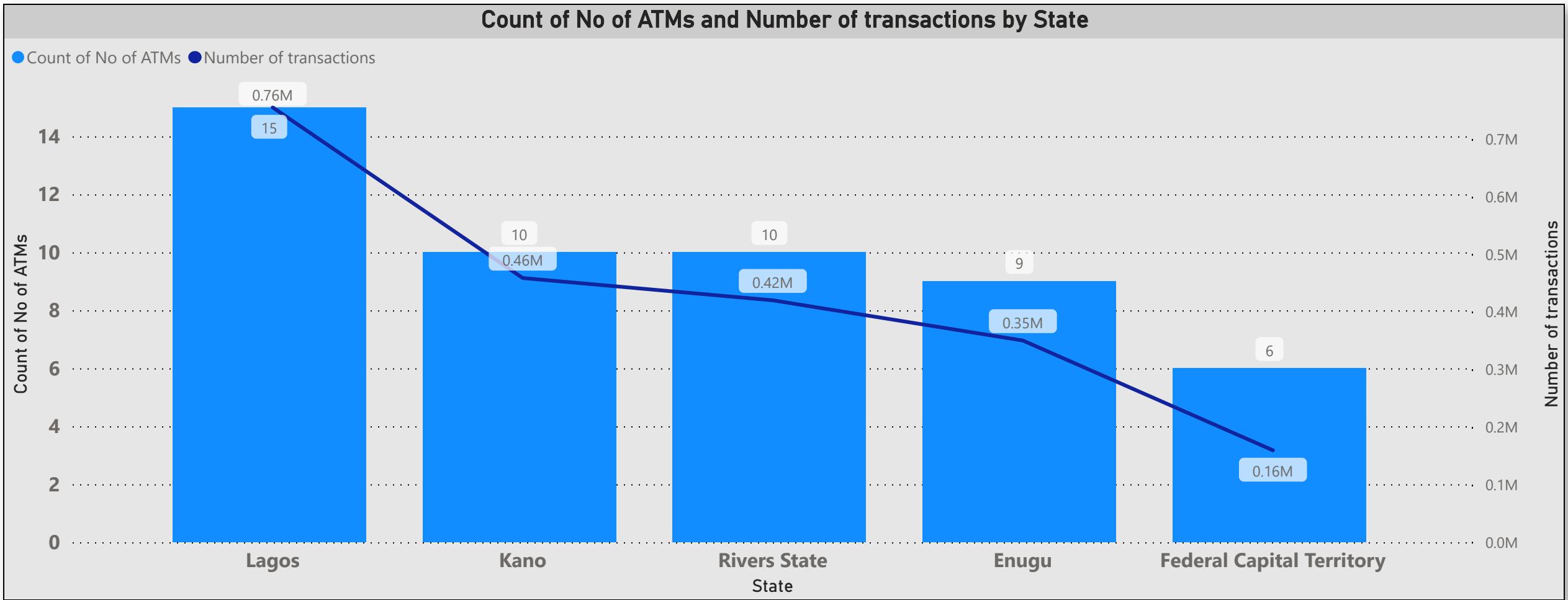
1.What is the average transaction amount per customer? Are there any significant variations based on factors such as location, gender, or account type?



INSIGHTS:

The average transaction amount in LAGOS city is more compared to other cities and the there is no significance difference seen in transaction based on gender and account type.

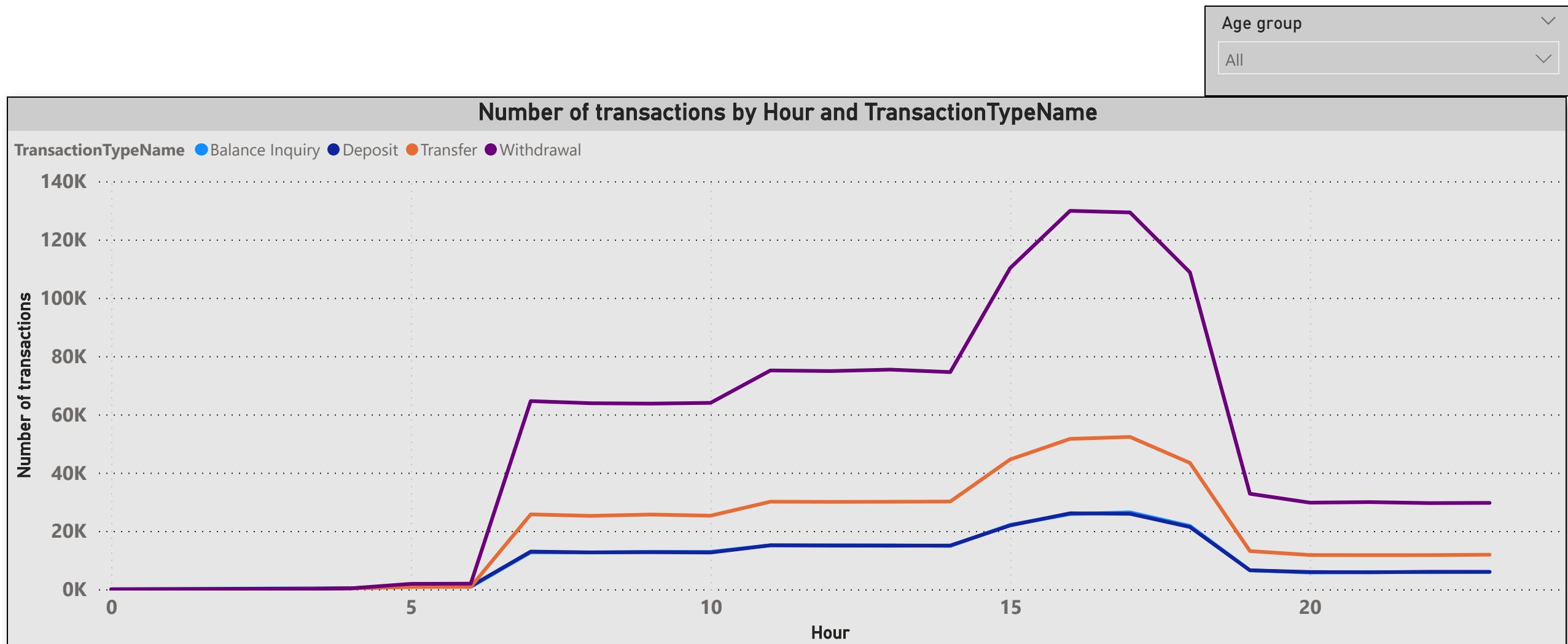
2. Which locations have the highest number of ATMs, and do they align with the areas of high customer traffic?



INSIGHTS:

Lagos has high number of ATM's with 15 which clearly align with its traffic/usage.

3. Are there any specific transaction types that are more popular among customers? Can we identify patterns or trends in transaction types based on demographics or time of day?



INSIGHTS:

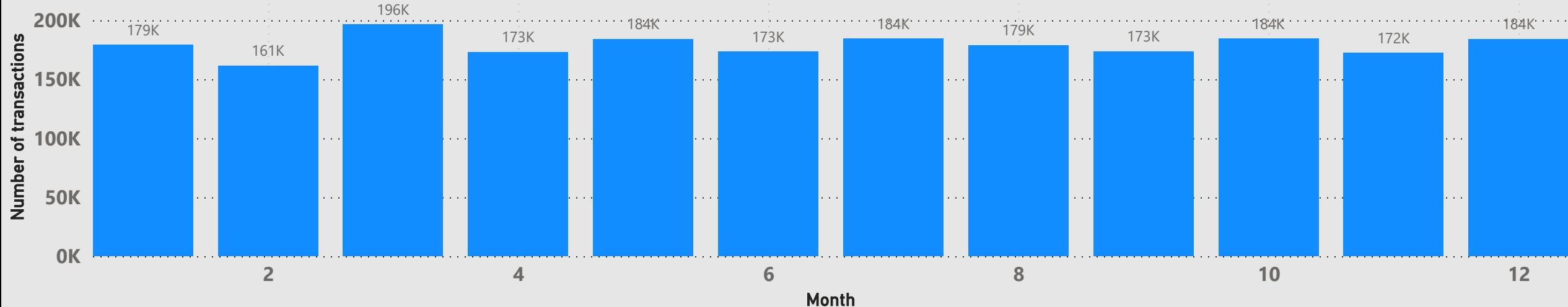
Withdrawals seem to be the most popular transactional type among customers and the peak hours for any transaction type is 4 to 5pm for any age group. Before 6am there are very few transactions that incur.

4. How frequently do customers use the ATMs? Are there any specific days or months with increased activity?

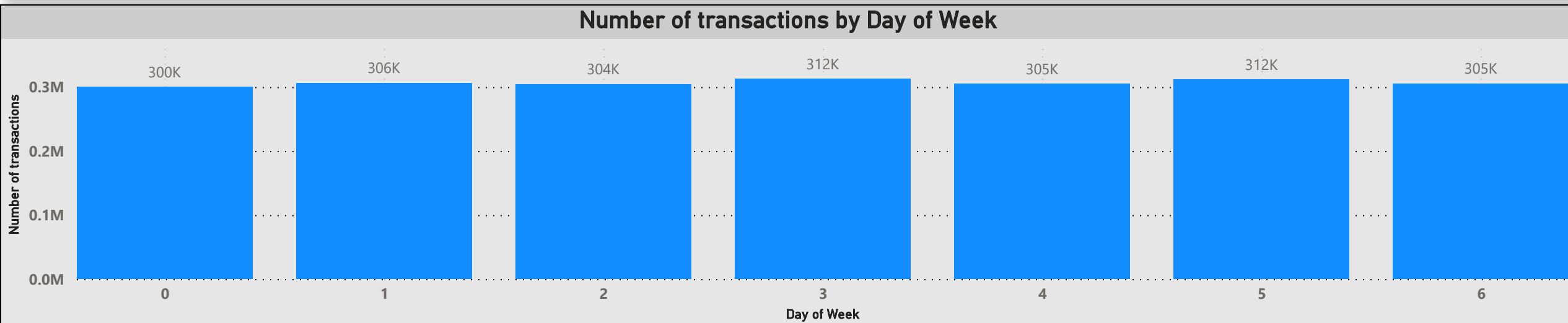
State

All

Number of transactions and Sum of Day of Week by Month



Number of transactions by Day of Week

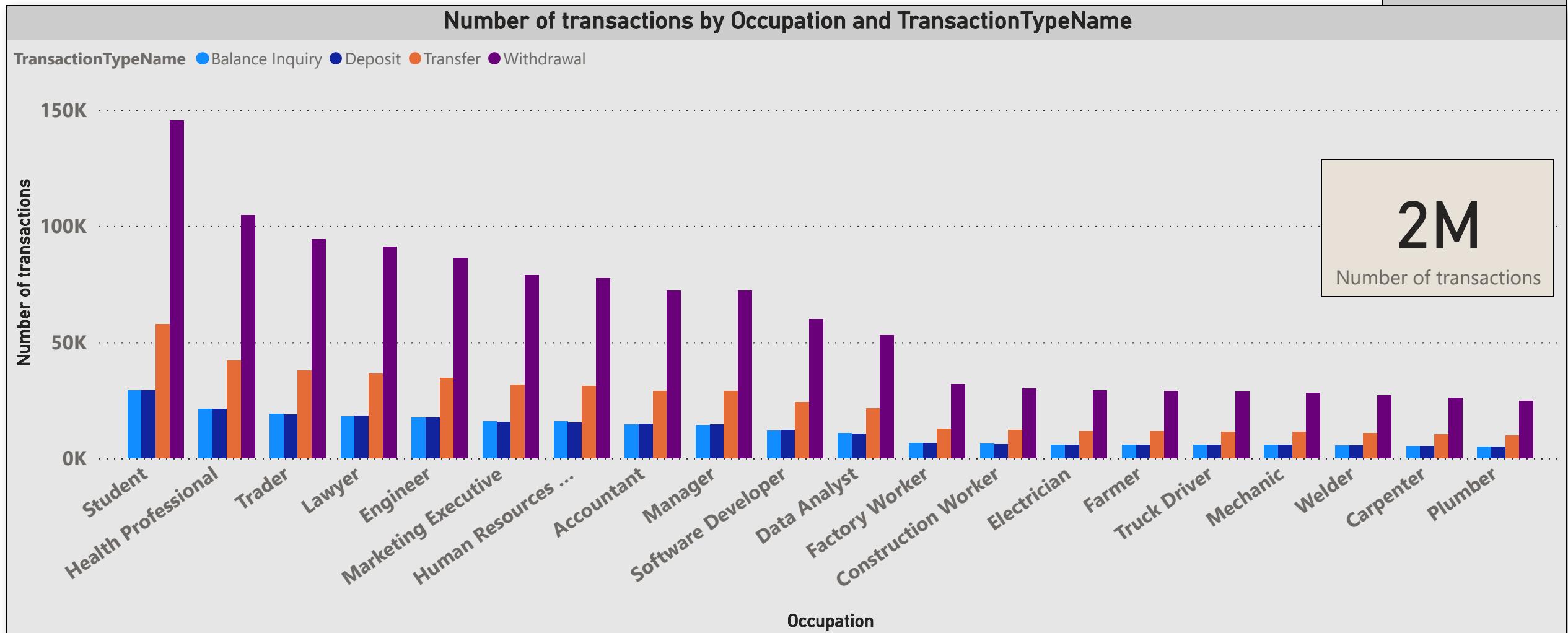


INSIGHTS:

From our analysis we could see March has higher number of transaction and February has the least comparatively, whereas in days of the week Sunday seems to have lower number of transactions whereas Wednesday & Friday has the highest transactions happened.

5. Are there any noticeable patterns in ATM usage based on the customer's age or occupation?

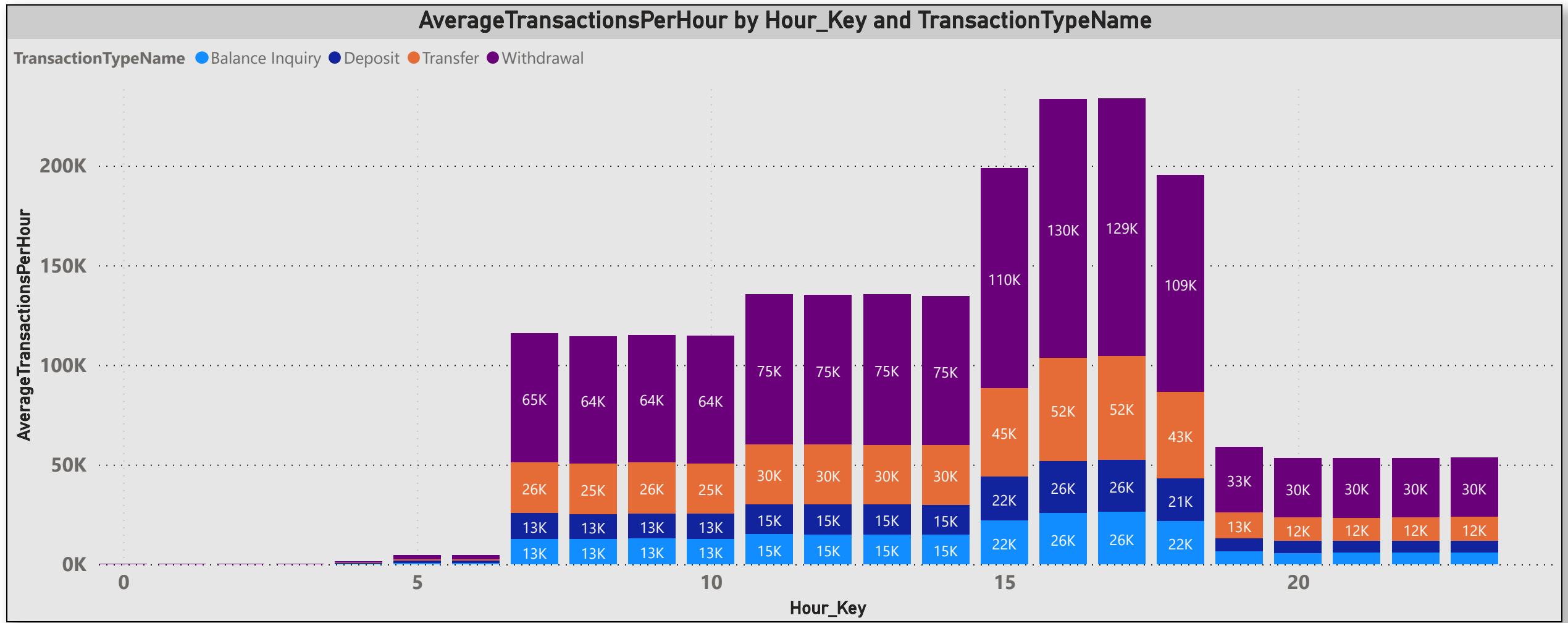
| Age group |
|-----------|
| All |



INSIGHTS:

In overall, Students use the ATM frequently and if we look by age group 26-35years old uses the most in all transaction types and the majority of them are healthcare people.

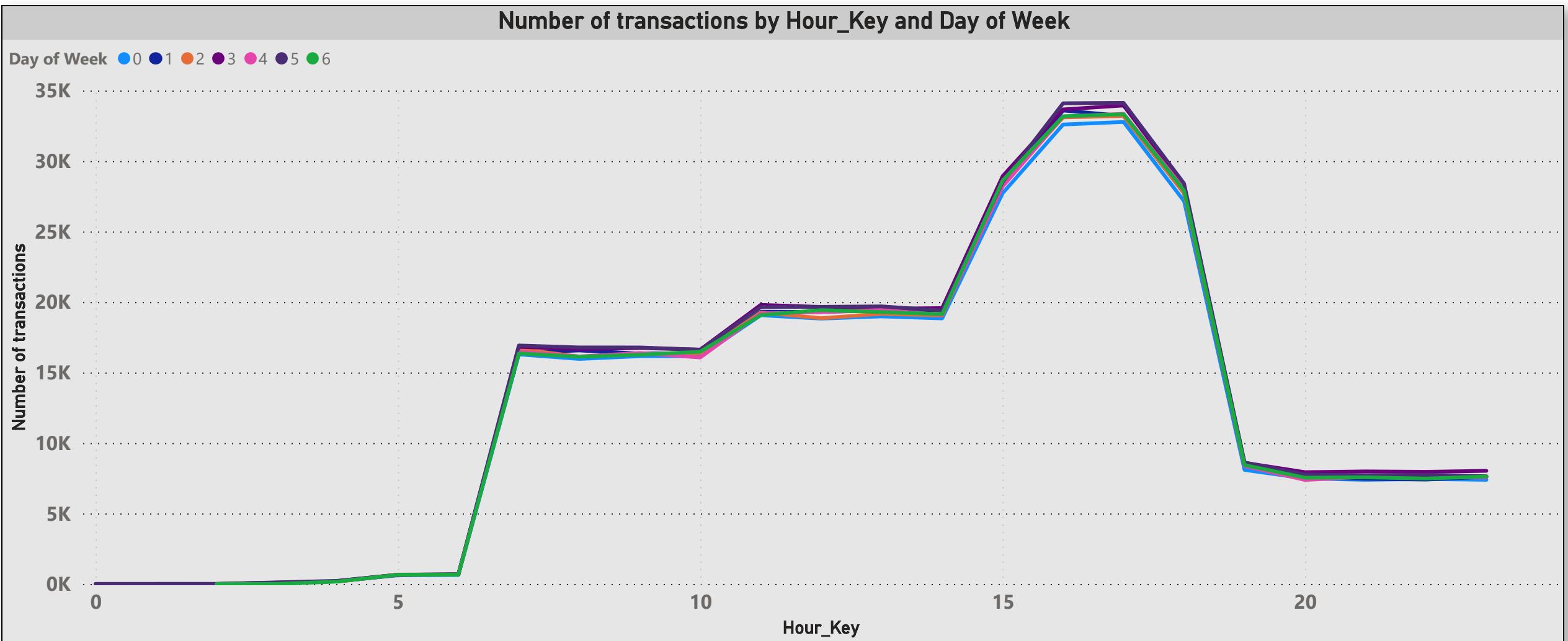
6. How many transactions occur during peak hours? Are there any specific transaction types that dominate during these.



INSIGHTS:

An average of 234k transactions has happened during peak hour between 4pm to 5pm. Withdrawal type has happened the most.

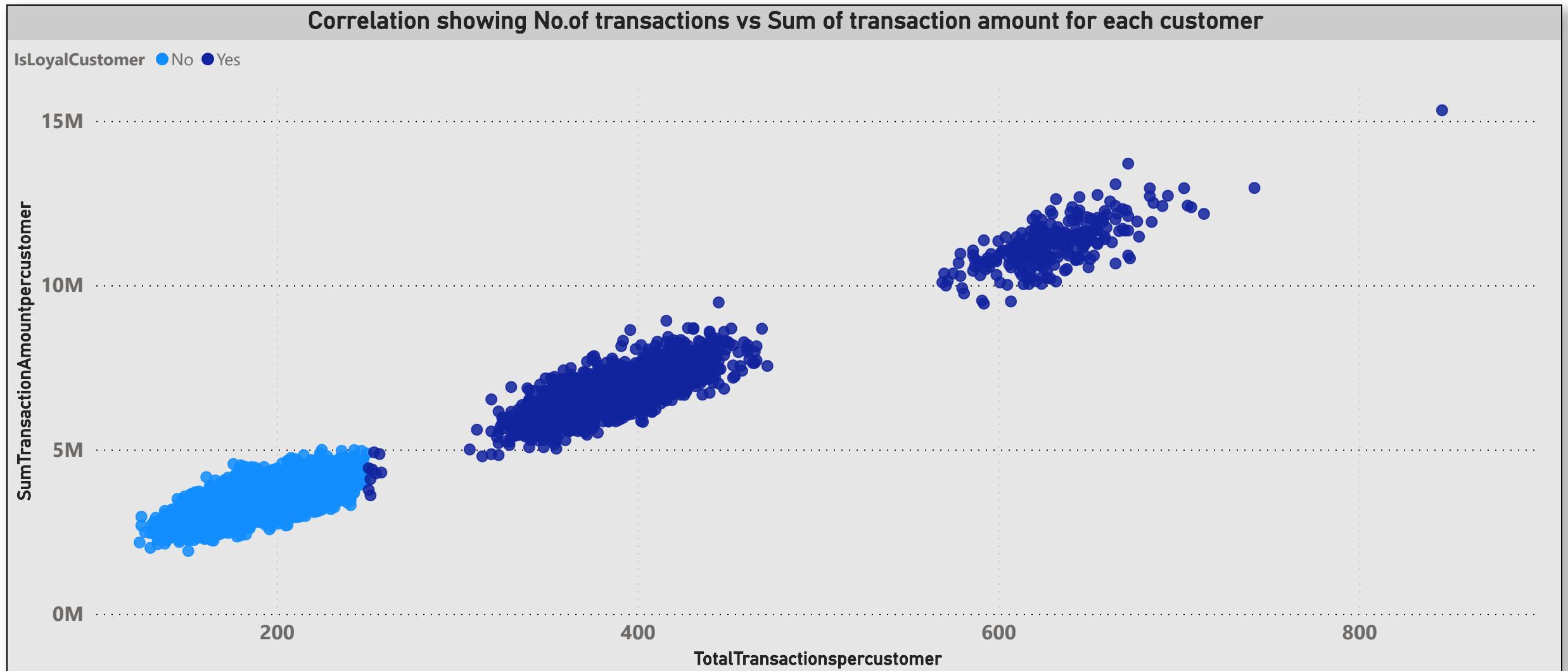
7. Are there any differences in transaction patterns between weekdays and weekends?



INSIGHTS:

There is a very less difference in hourly transactional patterns between weekends and weekdays.

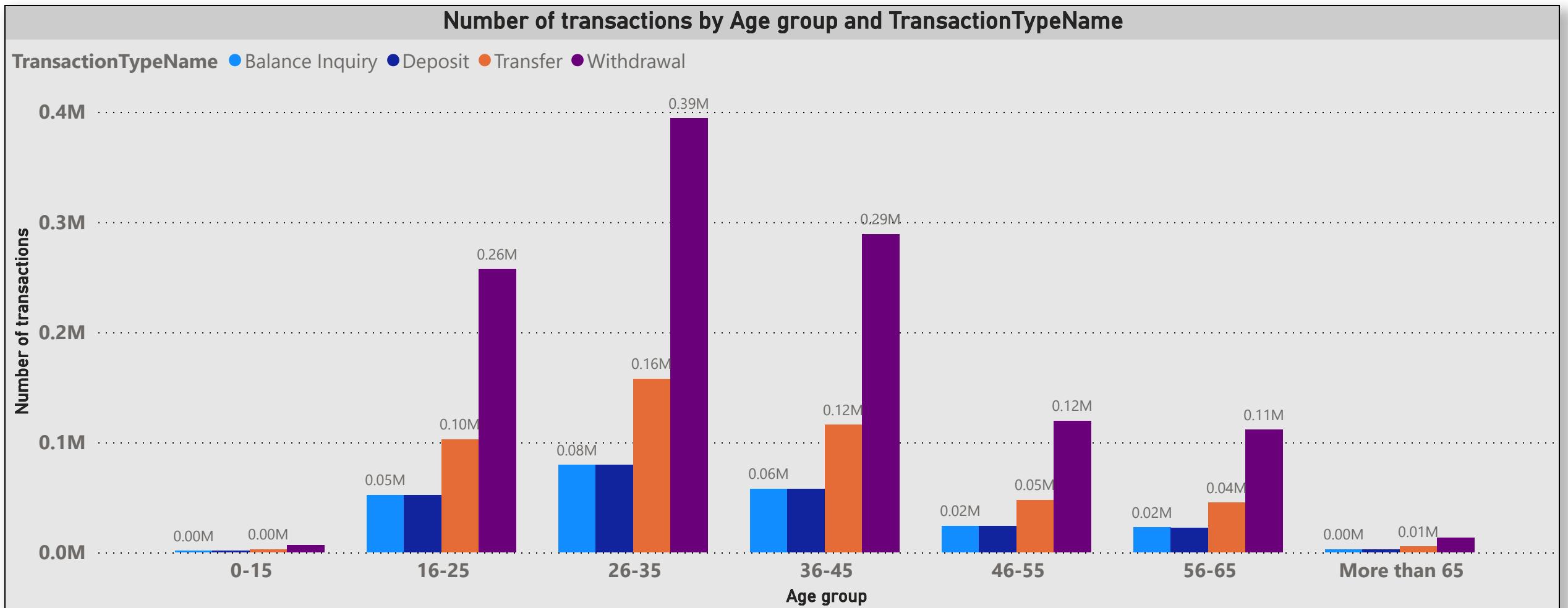
8.Are there any customers with a high number of transactions or large transaction amounts? Can we identify any loyalty or VIP customers based on their ATM usage?



INSIGHTS:

Assuming the threshold for a loyal customer as ≥ 250 transactions, majority of the customers are loyal and also there seems to have more customers who have really high transaction portfolio. Cardholder EN-008-1093 has made the highest total transaction amount of 15M with 846 transactions.

9. Can we identify any correlations between the transaction type and age of customer?

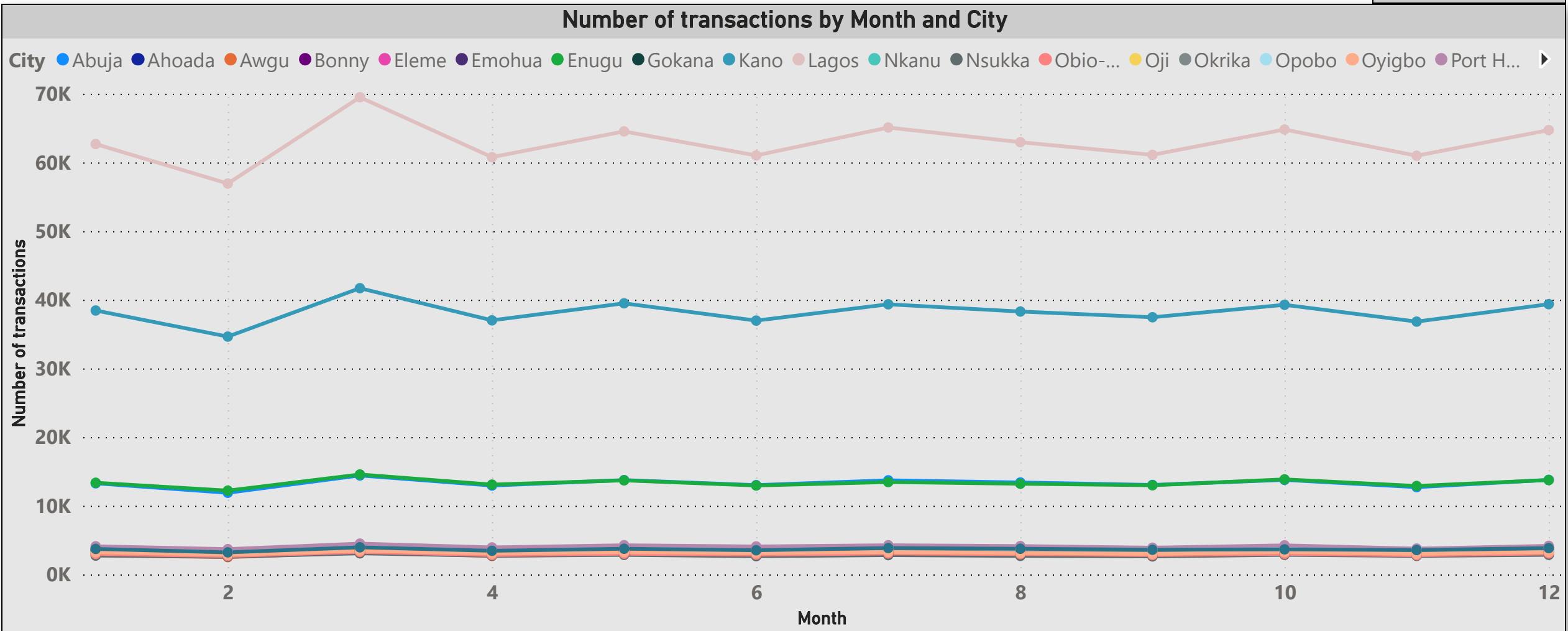


INSIGHTS:

In all age groups , deposits made are less whereas the withdrawals are high. People above 65 tends to make very minimal number of transactions and 25-35 age group people makes the highest.

10. Are there any specific locations where the ATM usage is consistently high or low? Can we identify any factors (e.g., city, state, country) that contribute to this pattern?

State, City ▾
All ▾

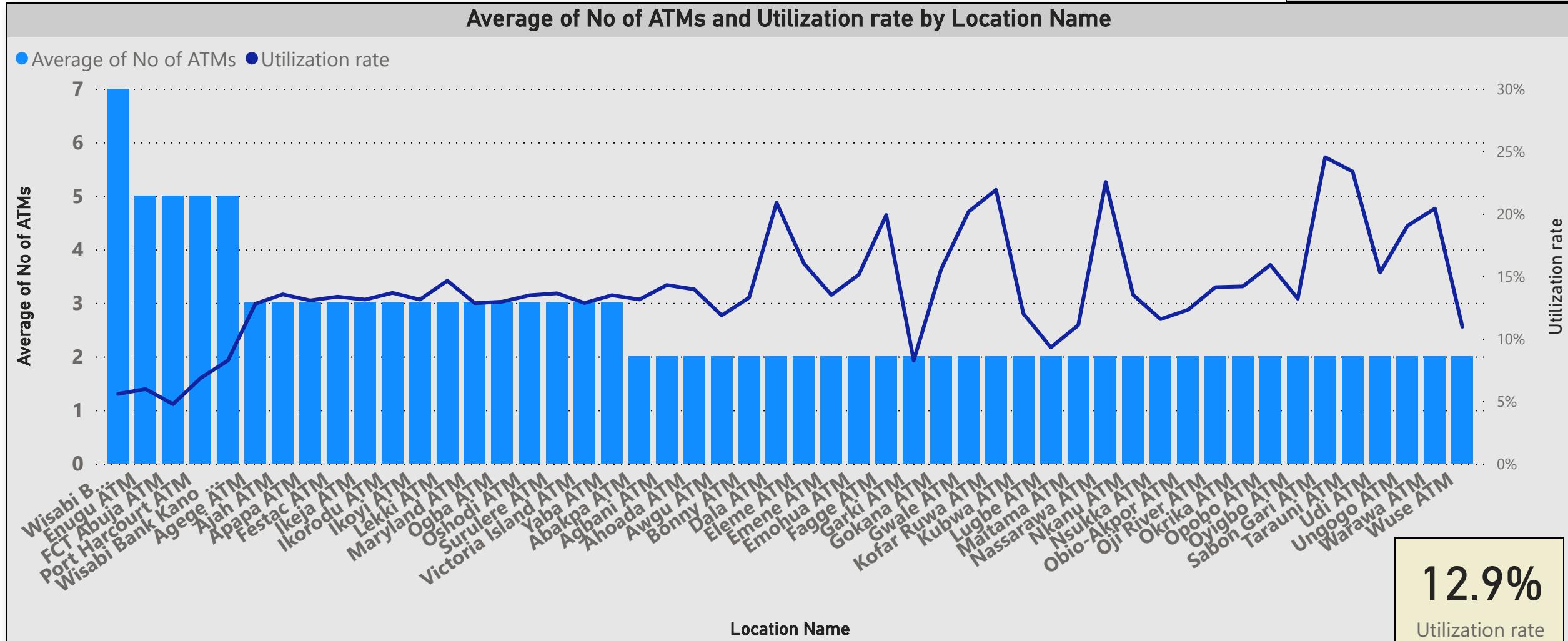


INSIGHTS:

Enugu state is having low usage of ATM whereas Lagos and Kano having the highest usage of ATM consistently .However this can be verified by calculated the utilization rate.

11.What is the average number of ATMs available per location? Are there any locations where the number of ATMs is inadequate or excessive compared to customer demand?

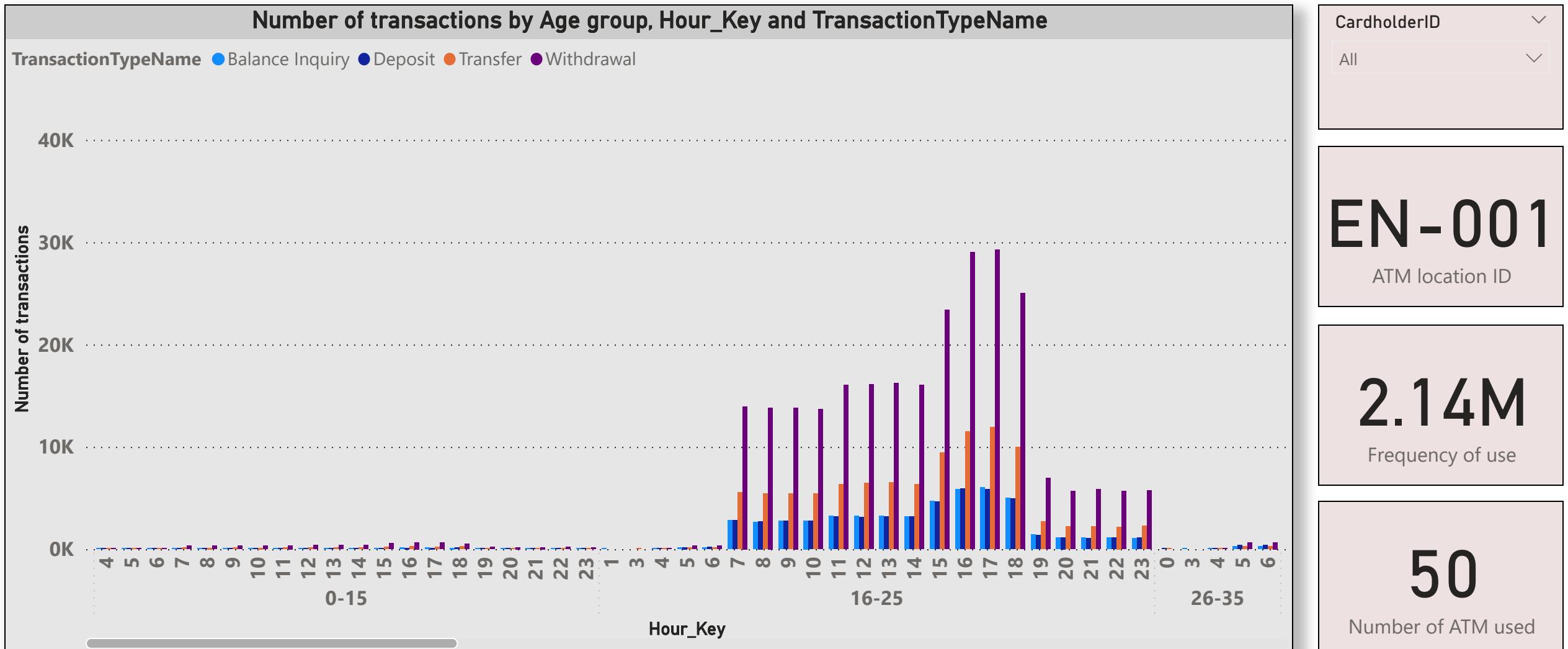
| | |
|----------------------------|---|
| State, City, Location Name | ▼ |
| All | ▼ |



INSIGHTS:

FCT Abuja(4.8% utilization) and Wisabi bank HQ(5.6%utilization) has excessive ATM irrespective of the usage. Sabon Gari has highest utilization(25%) compared with other ATM.

12. Are there any cardholders who frequently use multiple ATMs? Can we identify any patterns in their transaction behavior or demographic characteristics?



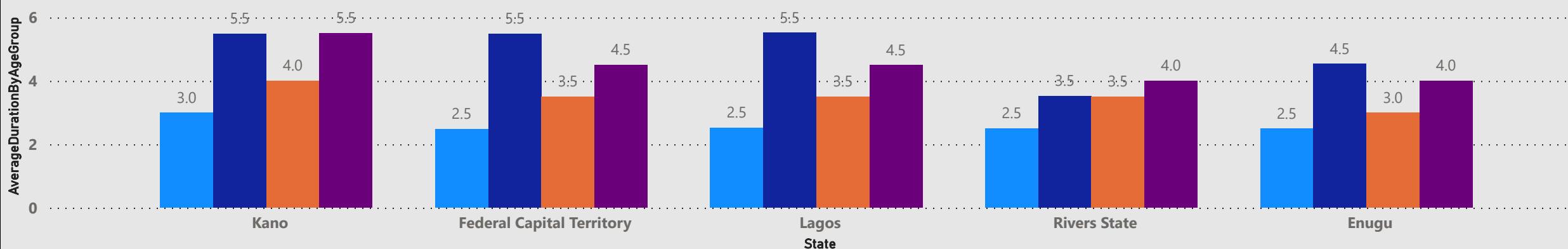
INSIGHTS:

In our dataset, there are no customer who used more than a single ATM. Each customer has made all their transaction with a single ATM which in real case less probable to happen.

13. Can we identify any correlations between the transaction duration (start and end datetime) and factors such as transaction type, location, or cardholder demographics?

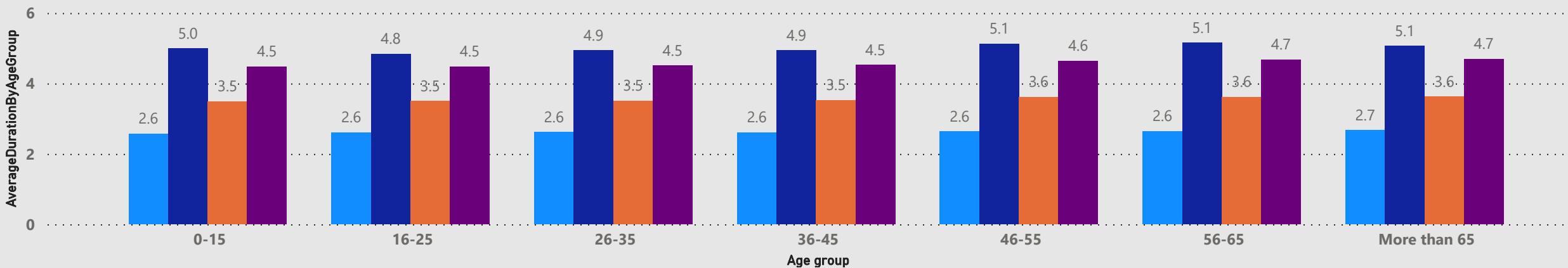
AverageDurationByAgeGroup by State and TransactionTypeName

TransactionTypeName ● Balance Inquiry ● Deposit ● Transfer ● Withdrawal



AverageDurationByAgeGroup by Age group and TransactionTypeName

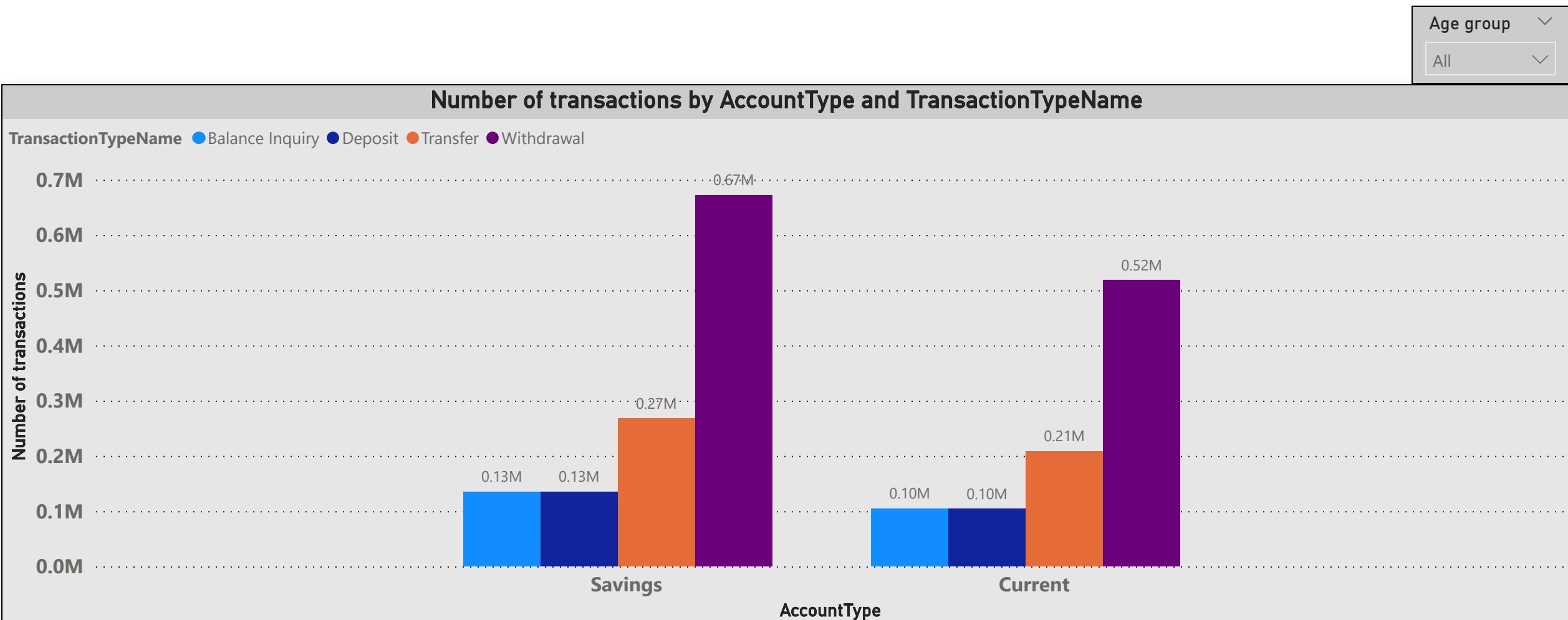
TransactionTypeName ● Balance Inquiry ● Deposit ● Transfer ● Withdrawal



INSIGHTS:

According to the analysis, Kano has a higher average duration for withdrawal transactions, taking an average of 5.5 minutes. On the other hand, Enugu has a low transfer time, with an average of 3 minutes. The time taken for balance enquiries is relatively consistent across all states. When examining deposit transactions, it is observed that the time taken for individuals in the age group above 45 and below 15 is slightly higher compared to other age categories.

14. Can we determine if there is any relationship between the transaction type and the account type (e.g., personal, business) of the cardholders?

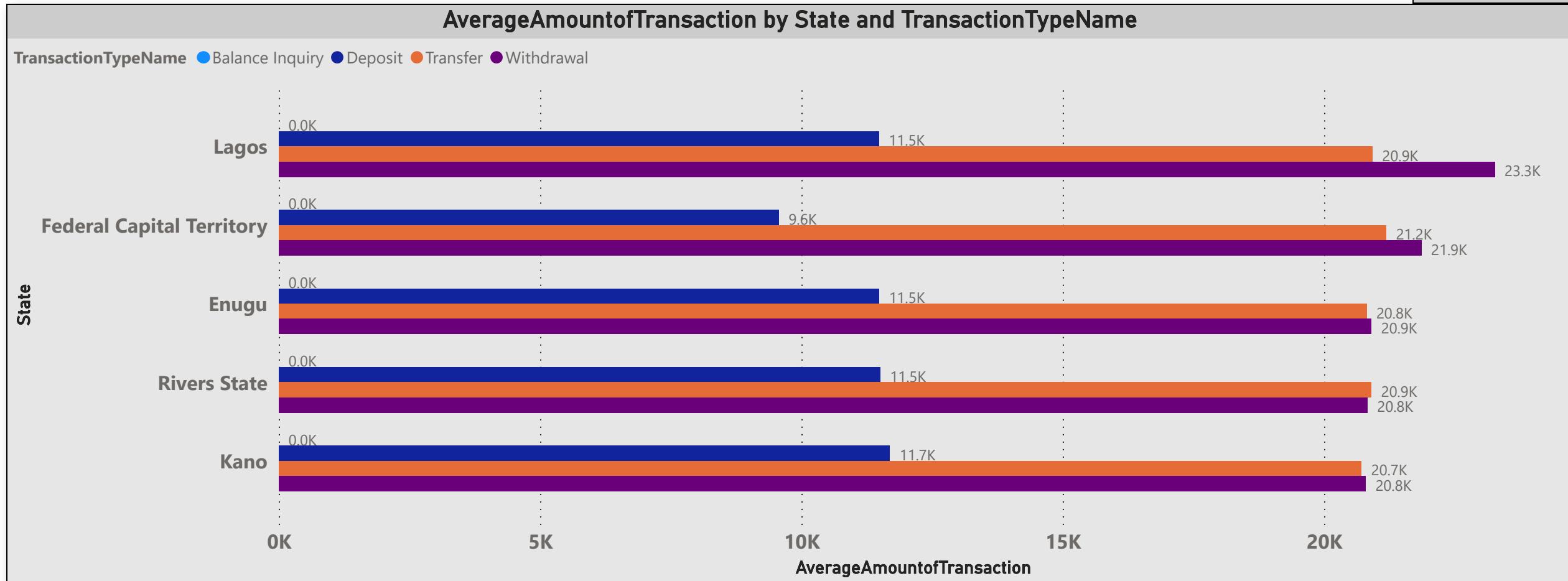


INSIGHTS:

Savings accounts generally have more transactions than current accounts. However, individuals below the age of 25 tend to have fewer current accounts, resulting in a higher proportion of transactions being made through savings accounts. And it is interesting to note that above the age group of 25, both savings and current accounts have an equal amount of transactions incurred.

15.What is the average transaction amount by location and transaction type? For each occupation?

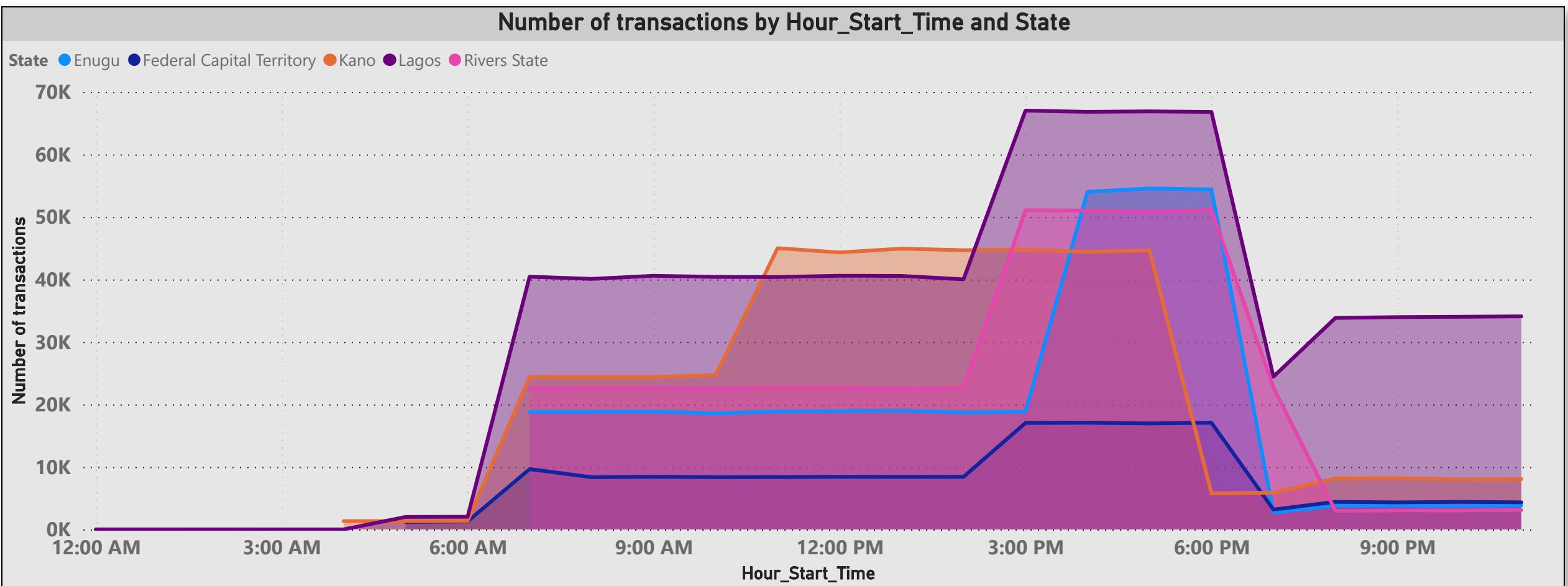
Occupation ▾
All ▾



INSIGHTS:

In overall, Lagos has the highest average amount of withdrawal, Federal capital territory has the highest transfers and Kano has the highest deposits. Its interesting to note that Enugu, River state and Kano has closer average amount of Withdrawals, Transfers and Deposits.

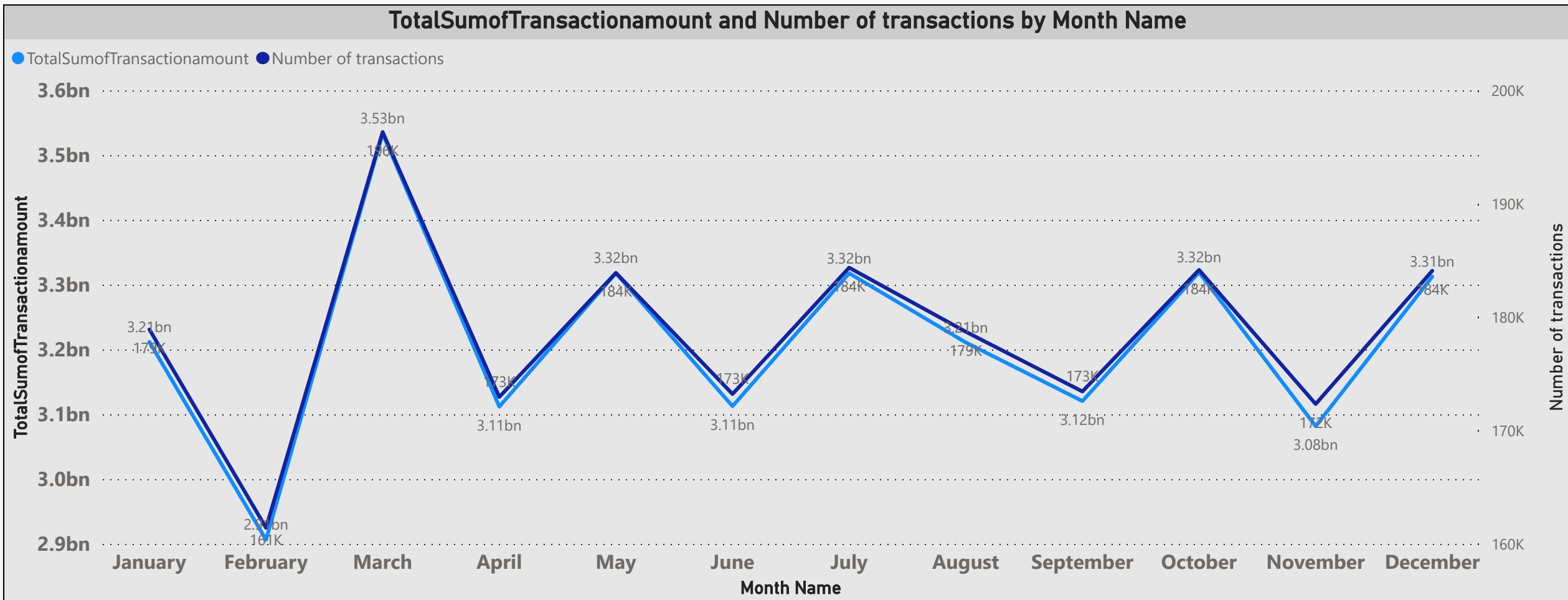
16.Which ATM location has the highest number of transactions per day, and at what time of the day do the transactions occur most frequently?



INSIGHTS:

Lagos has the highest transactions per day and the transactions occurs mostly after 6am until 11pm. The peak transactions hours are between 3pm and 6pm for any state.

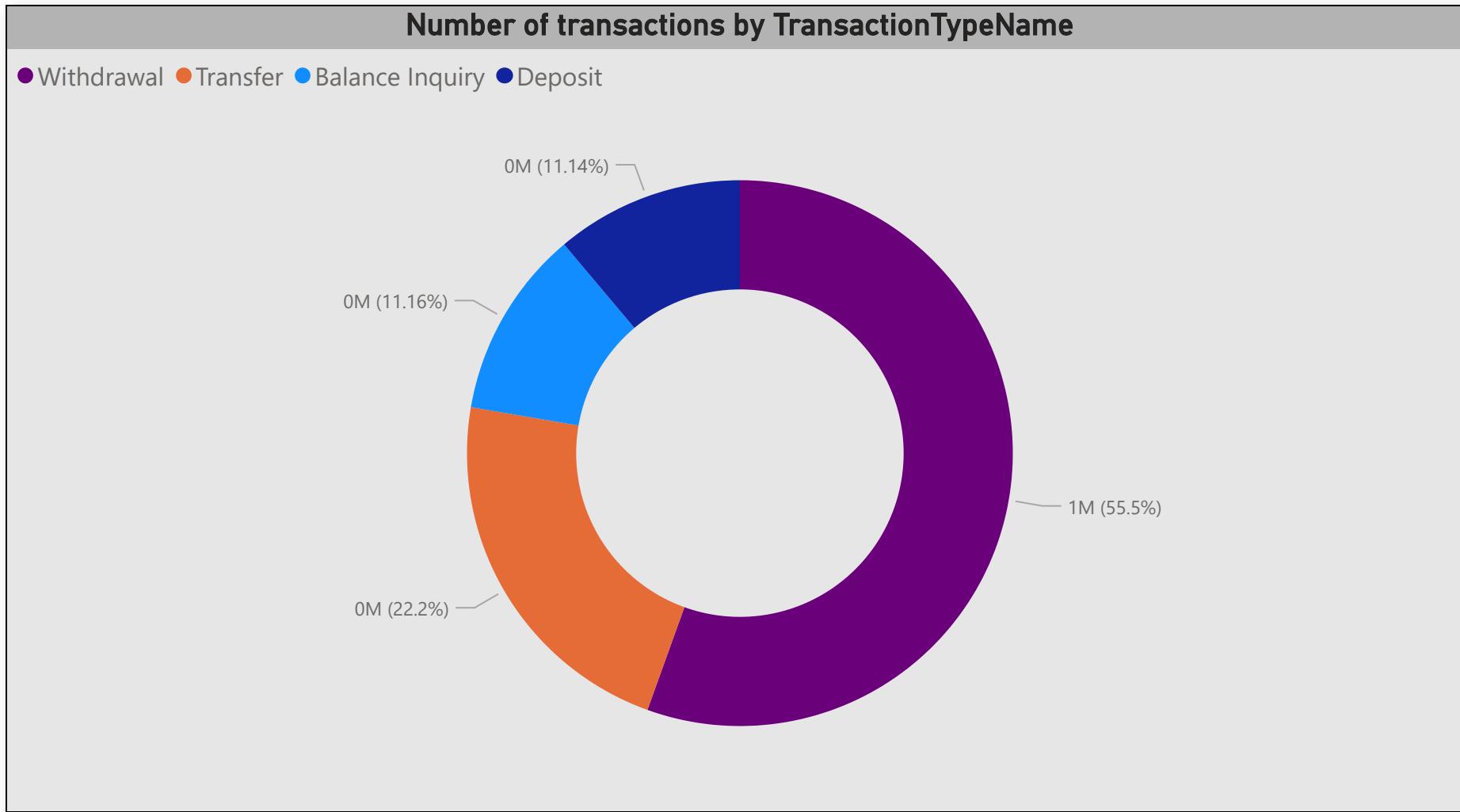
17.What is the trend of transaction volume and transaction amount over time, and are there any seasonal trends or patterns?



INSIGHTS:

Higher volume and number of transactions has occurred in the month of March followed by May, July, October and December. The month of February has the lowest transactions.

18.What is the most common transaction type, and how does it vary by location, time of day and customer type (Wisabi customer vs. non-Wisabi customer)?



State

- Select all
- Enugu
- Federal Capital Territory
- Kano
- Lagos
- Rivers State

IsWisabi

| |
|---|
| 0 |
| 1 |

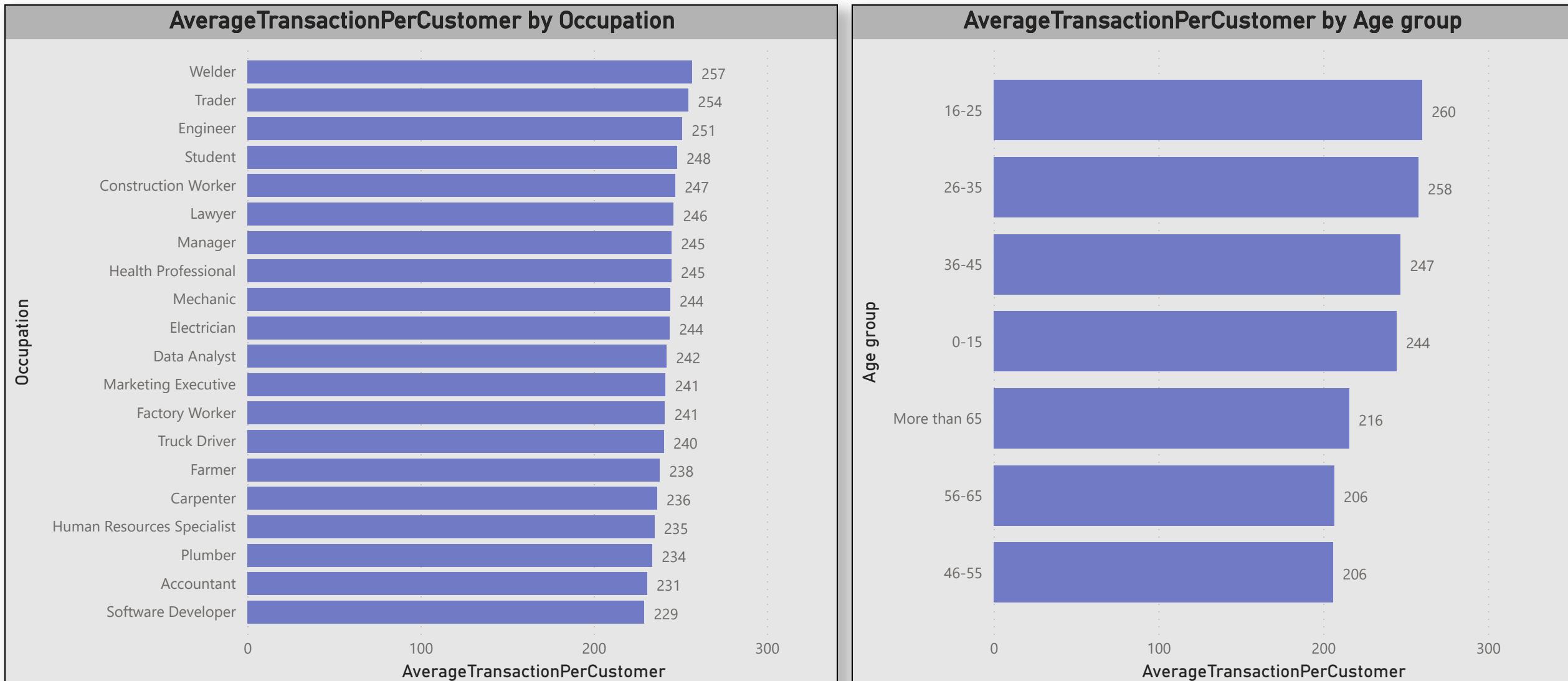
Hour_Key

- All

INSIGHTS:

In overall, the most common transaction type among both wisabi and non-wisabi customer is Cash withdrawal which accounts for 56%. Based on location the percentage of transaction type does not vary much and at any give time of the day withdrawal is the highest transaction type .

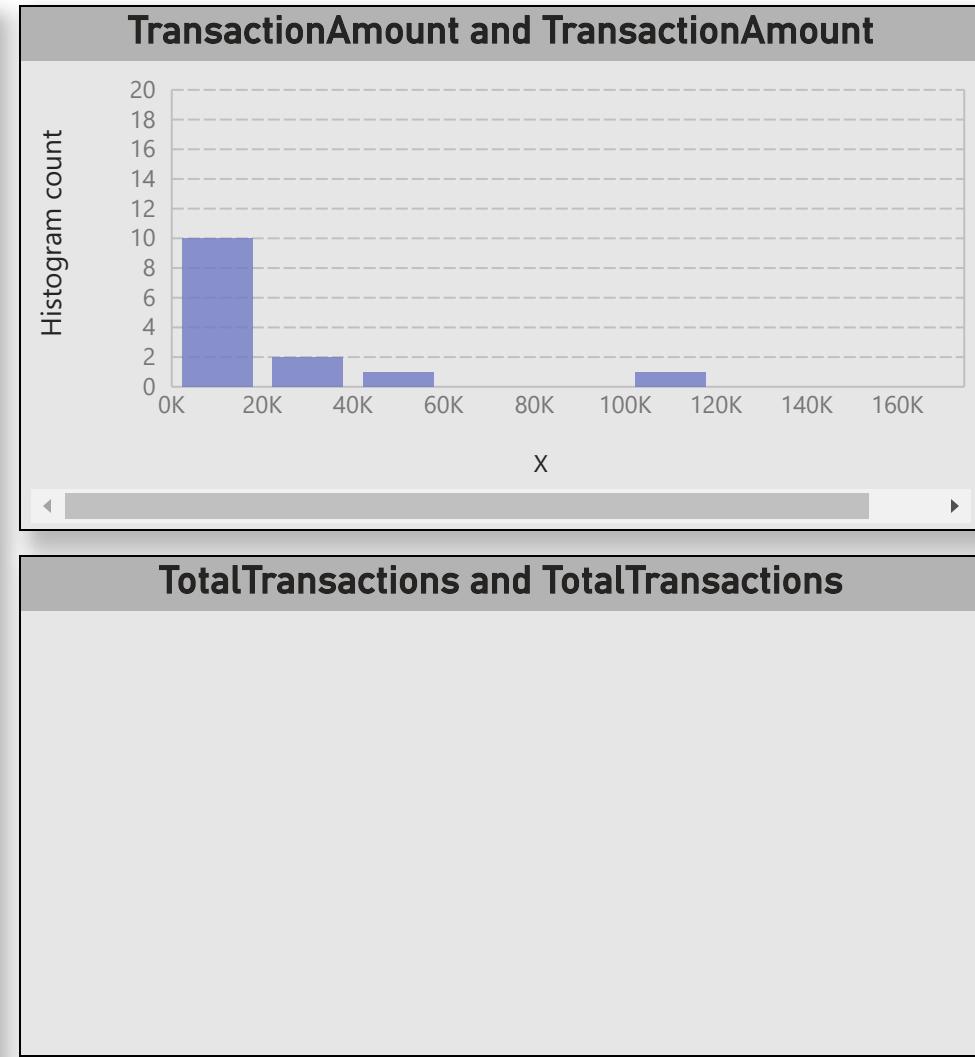
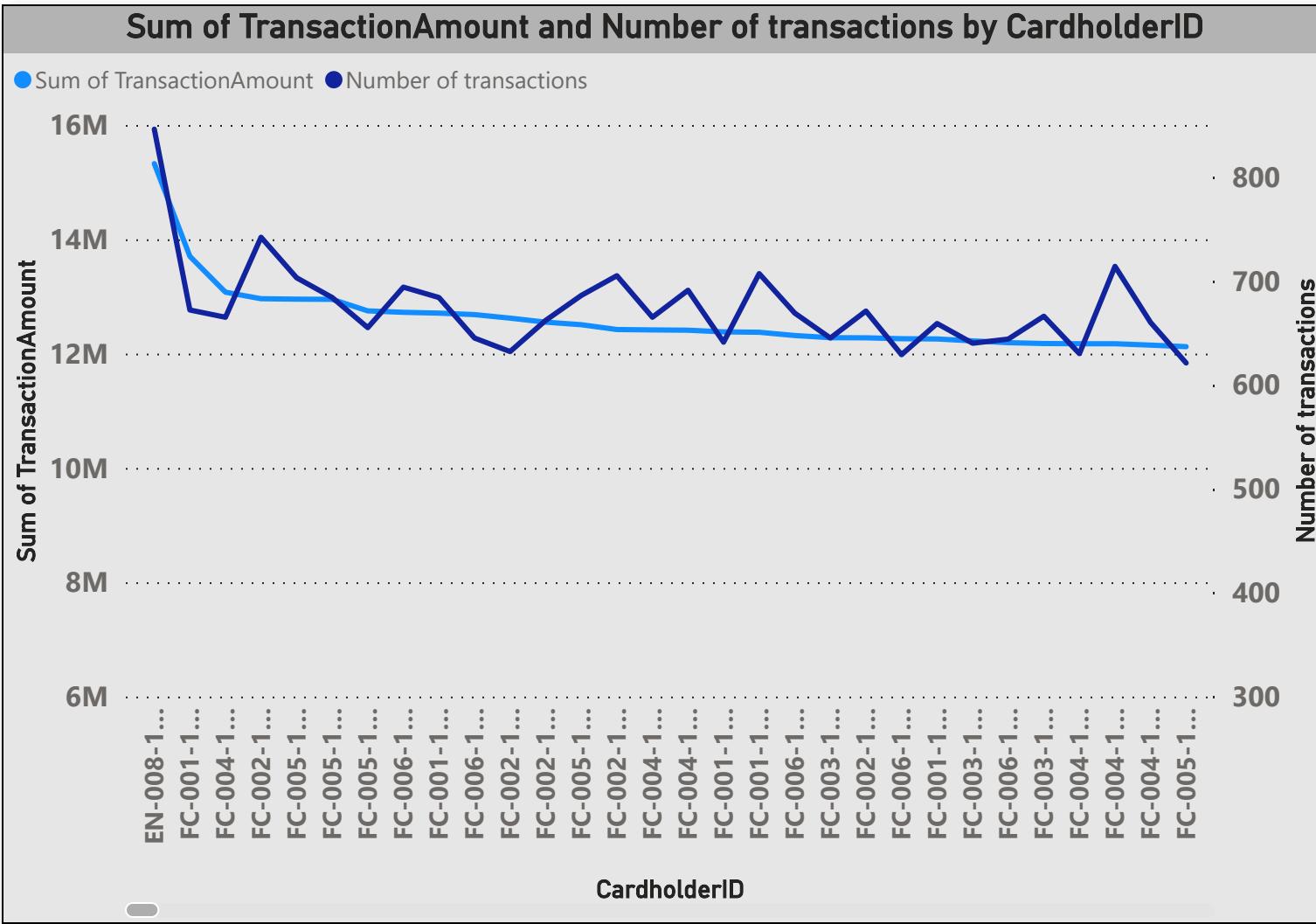
19.What is the average transaction frequency per customer by occupation and age group?



INSIGHTS:

Average Transaction per customer by occupation does not seem to vary much but with age we could see some interesting insight like people above 65 transacts more than people of age between 45 to 65.

20.What is the distribution of transaction amounts and transaction frequency, and are there any outliers?



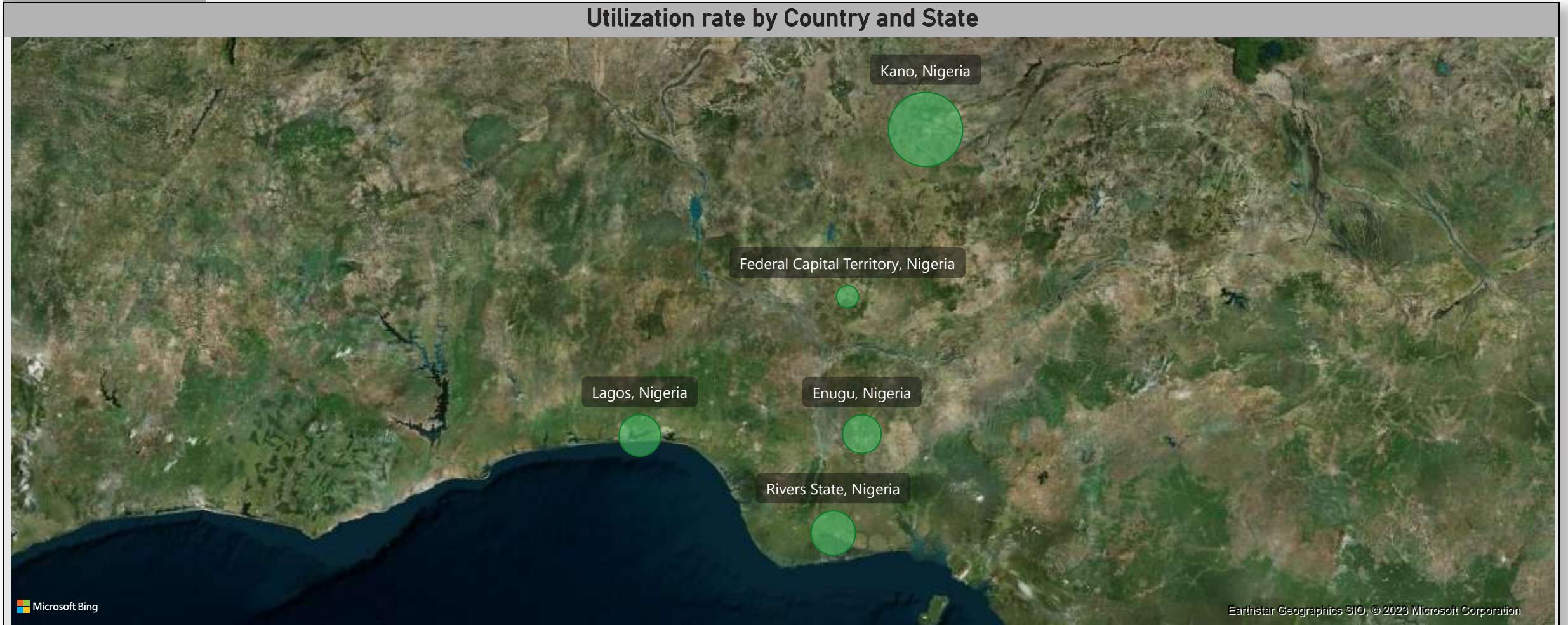
INSIGHTS:

The data for transaction frequency and transaction amount for each customer does not seem to have much outliers. From histogram, we can see less than 20k is the most popular transaction amount and 140-270 is the most popular number of transactions.

21.Which ATM locations have the highest and lowest utilization rates, and what factors contribute to this utilization rate?

12.9%

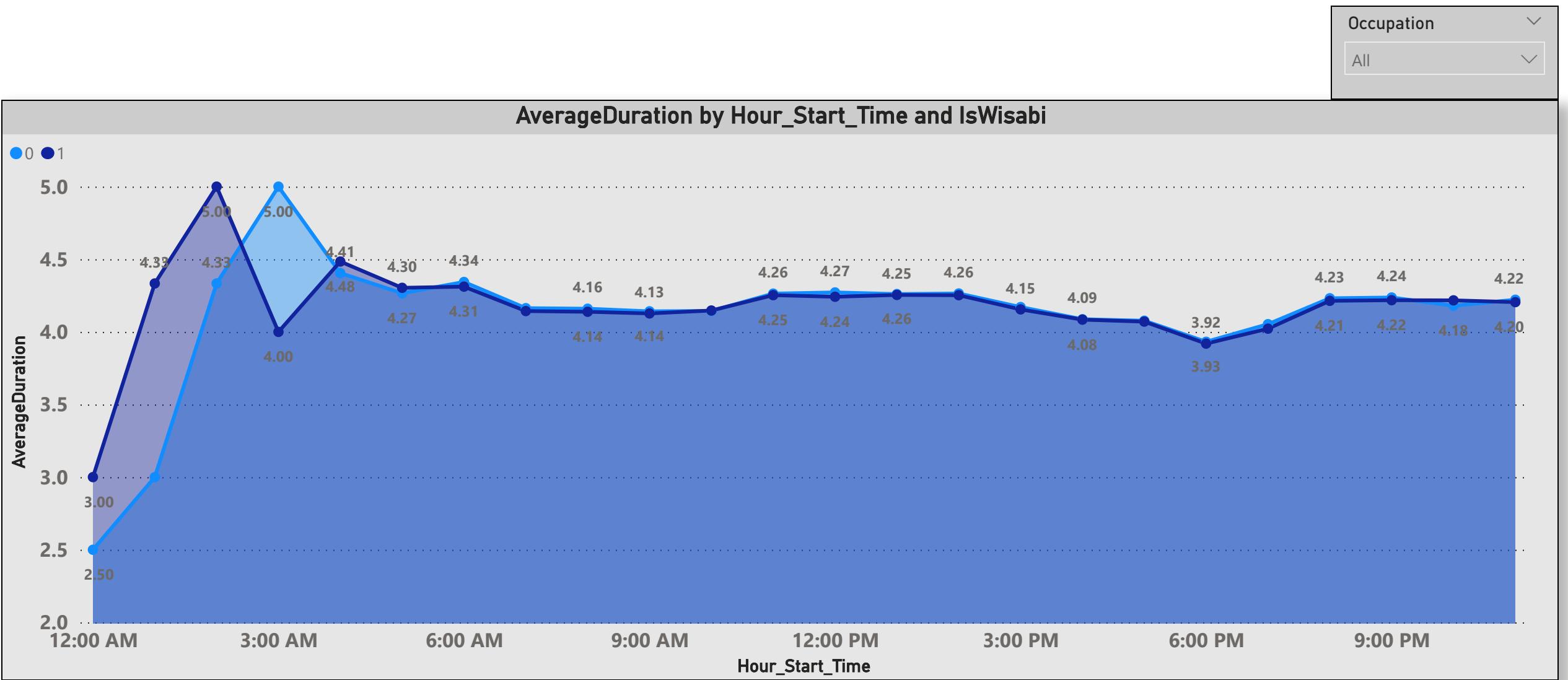
Utilization rate = (Total transaction time/Total available time)*100



INSIGHTS:

Kano has high utilization rate and Federal capital has lower utilization rate. The reason for low utilization rate could be presence of more number of ATM's at near proximity or higher downtime.

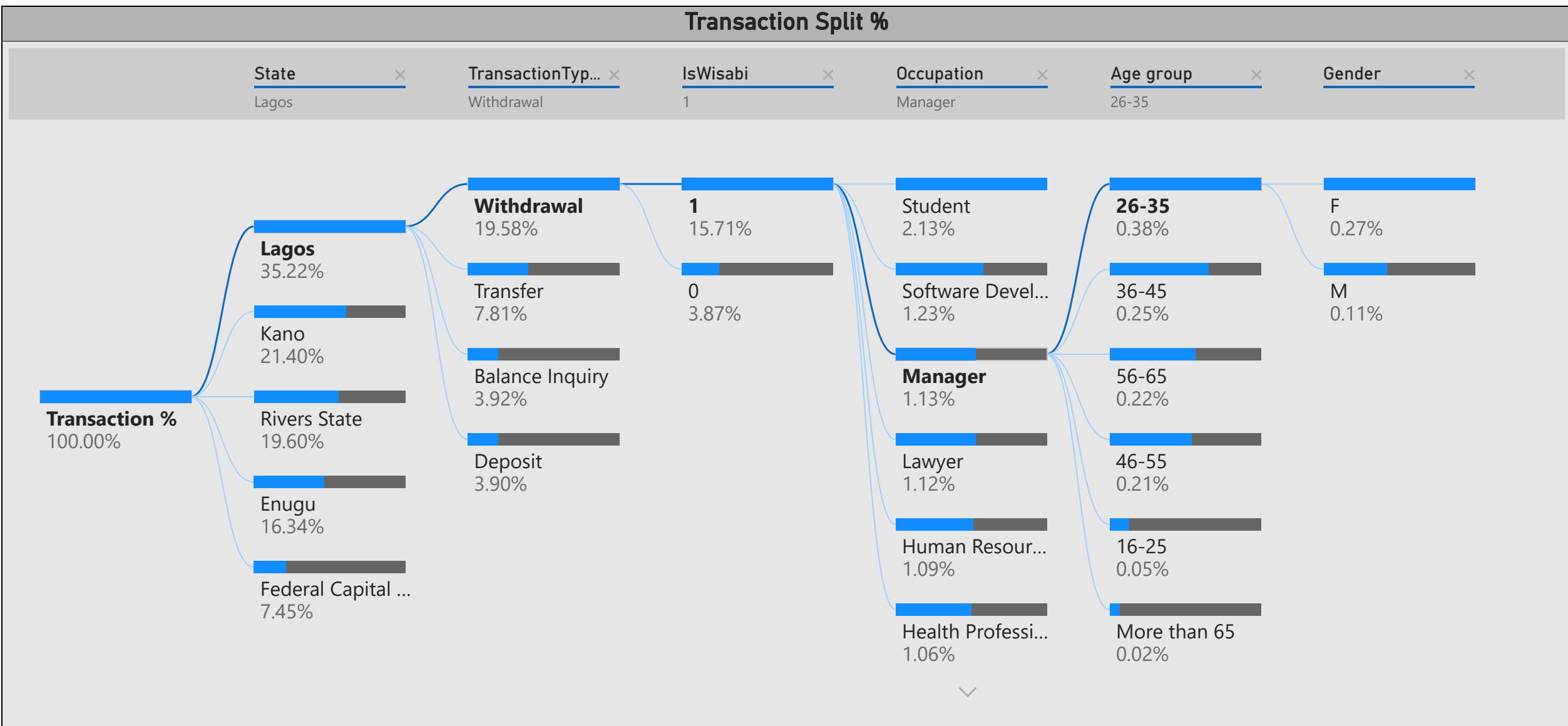
22.What is the average transaction time taken by time of day and how does it vary by customer type and occupation?



INSIGHTS:

The wee hours transaction duration are more compared to rest of the day. This could be because of limited staffing at the backend or other reasons.

23. Show the detailed transactions split in percentage.



24.Create an interactive bubble chart that visually represents the average transaction amount, average duration, and total number of transactions for each day and location

